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THE OPPORTUNITY COST BASIS OF THE SUBSTITUTION METHOD IN FARM MANAGEMENT¹

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A preceding article (JOURNAL OF FARM ECONOMICS, July, 1932, pp. 384-405) discussed the nature of certain costs, or resistances to production, which grow out of the fact that the farm entrepreneur may use his limited resources in various alternative ways. It is the purpose of the present article to consider what possibility there may be of a fuller recognition of these and other cost relationships in the actual process of research in farm management. That such elements in the farm manager's problem involve many features which are not very definitely measurable is, of course, self-evident. But this is true also of the theoretical treatment of large parts of the field of economics, such, for example, as the theory of money and prices and the principles involved in comparative advantage. In the present case we are concerned primarily with an attempt to bring into present day research in farm management a greater degree of realism and a fuller use of the general theory of economics.

Most researches consist largely of analysis, of a resolution of things into their constituent elements in order that these may be better understood. With this in mind the classical and neo-classical economists resorted to the familiar *caeteris paribus*; in effect, they said we will for the moment keep out all inter-effects from other elements in the situation and see how this one will act if it is all by itself. Thus we will best understand its nature and its behavior when associated with other elements. Much of the quarrel between them and their critics has centered around this so-called over-simplification, this static treatment of things

¹ Paper No. 32. The Giannini Foundation of Agricultural Economics.

drawn from a dynamic world, and this assumed independence of action which is difficult to find in the world around us.

The farm management man who sets out to use the substitution or "synthetic" method steps boldly beyond the realm of analysis into that of synthesis. If research consists largely of analysis, a seeking of facts or principles, synthesis is an attempt to use these facts and principles in rebuilding something in place of that pulled to pieces, something supposedly better. Synthesis presupposes rather full knowledge of the individual elements which are to be used in building. The more complete this knowledge the more accurately can the results of given combinations of various parts be forecast. However accurate such a forecast may be, it is, after all, in the nature of a supposition. But it may be carried beyond this and thus come again to be actual research or fact-finding. These new systems may be set up and tried out, and thus a shift may be made from analysis to experiment. Such experimentation will check further the accuracy of the earlier analysis and the quality of the judgment used in recombining the elements.

In the use that has been made of the synthetic method up to this time there may be some question whether the analytical phase of the work has been done with sufficient care and understanding to make possible an accurate rebuilding with the materials derived from such analysis. For example, it is customary to speak of "labor requirements" and of "feed requirements" as though these were fixed and unchangeable, rather than relative to the needs of other lines of production and to the prices of items of input and output. Yet the study of diminishing returns in given enterprises has demonstrated that these are not "requirements" but rather particular factor combinations that have been established by rule of thumb for the enterprise-combinations previously existing on these farms; that the optimum inputs may be different for different price conditions and, a point that has been little discussed, for different combinations of enterprises. Thus the amounts and timing of labor inputs are judged largely by what they have been rather than on the basis of what might be an optimum relationship under a new set of conditions. There is of course a considerable element of flexibility in the farm labor situation which makes it possible for the farmer to adjust himself to errors of judgment which he may make in developing some new organization of the farm business, and he may change the so-called "requirements" to a bet-

ter adjustment almost without being conscious of the fact that he is doing so.

Perhaps one of the best illustrations of the need for clearer recognition that there is not some one amount "required" and that the usual amounts applied may not be the right ones is to be found in the case of water applications on irrigated crops. As an example, the studies by J. C. Marr and G. E. P. Smith on Arizona crops show both that applications of water are frequently in excess of the amounts required for optimum yields and that the yield per acre-foot of water applied rises and then declines even where the amounts of water applied do not actually decrease total yields.² Total yields of wheat at the Gooding station rose from 1600 pounds per acre with 1.0 acre-foot of water to 1900 pounds with 1.7 acre-feet, and dropped again to 1700 pounds with 2.3 acre-feet (as read from curve applied to scatter diagram). Yields of milo showed some decline after applications reached 1.7 acre-feet. In view of these variations and the fact that extension agents in some areas are constantly calling attention to the evils of over-irrigation, can the inputs applied by farmers in practice be spoken of as "requirements" or even as approximate optima of input? Similar below-optimum results from customary inputs of other cost items are to be expected though as yet these have not been very well worked out and organized by the technicians in the various lines of agricultural production. A study by Reynoldson, Kifer, Martin, and Humphries indicates a similar variability in costs, though variation in all the items of cost is not worked out along the lines indicated in this article.³ Their study shows (pp. 30 and 31) markedly decreasing costs with larger acreages. As an example, the writers assign to the tractor-drawn combine with auxiliary engine the following depreciation charges with varying acreages harvested:

<i>Acres harvested</i>	<i>Depreciation per acre harvested</i>
400	\$1.00
500 .....	.80
600 .....	.66
700 .....	.57
800 .....	.50
900 .....	.44
1000 .....	.40
1100 .....	.36

² See Arizona Bul. 120. *The Use and Duty of Water in the Salt River Valley.*

³ L. A. Reynoldson, R. S. Kifer, J. H. Martin, and W. R. Humphries, *The Combined Harvester-thresher in the Great Plains*, U.S.D.A. Tech. Bul. No. 70, 1928.

These acreage differences may appear so large as to carry the matter out of the realm of ordinary farm variations, but such cost differences may in fact be even more striking for variations in smaller acreages if machinery involving any considerable expense is used.

Ezekiel pointed out this same variability in inputs in the following comment in 1926: "With cheaper feed and higher butter-fat prices than a year ago, many dairy farmers who a year ago could hardly afford to feed any purchased feed at all are now feeding grain heavily."⁴ Is the input of "a year ago" or that of the present to be considered the "feed requirement?" Can we not, without abandoning entirely a cost approach, recognize more clearly the dynamic nature of these relationships and break away from the static approach which has been so characteristic of the earlier use of cost figures?

The analysis in the preceding article has aimed merely at facilitating a better understanding of how the various elements of the farm business do behave, not alone when separated out for individual study but when the other elements in the situation are also taken into account. Methodology in farm management analysis should eventually develop procedure for a fuller cooperation between the enterprise study, including its technical aspects, and the general farm analysis. When such fuller coordination develops it will inevitably take into account the fact that the resistances, or costs, in producing the given product cannot be built up as a rigid structure but must rather be relative to a frequently changing level established by competing lines of production. This changing level of resistance due to alternative opportunities would present insurmountable difficulties, from the standpoint of research along the lines here indicated, were it not for the fact that the effective competition tends to narrow down to certain periods which were earlier spoken of as being "critical" or somewhat determinate so far as the extent of the enterprise is concerned. This makes it possible to focus attention upon these particular points of competition in a way that provides a moderately definite measurement of the relative competitive strengths of the different enterprises. Thus it is not necessary to seek a balancing of completely unstable elements. Decision at one point creates a relatively fixed situation at other points. What is needed is a clearer knowledge of the nature of the balance which does exist,

⁴M. J. B. Ezekiel, "Studies of the Effectiveness of Individual Farm Enterprises," *JOURNAL OF FARM ECONOMICS*, Jan., 1926, p. 90.

and of the extent in which there really is or is not fixity in the relationships concerned.

Though certain of the "requirements" for feed and labor may be much less definite and fixed than they are often assumed to be, some other items may be more fixed than we are accustomed to consider them. For example, in the west-north-central states, there has been frequent suggestion of a change to a system of farming which involves replacing grain farming with dairy and hog production. Inadequacies of buildings, lack of credit, and limited personal adaptability to this kind of farming, though not always recognized, may be rather effective barriers to the change. Here, because of the inflexibility of these other resources and their possible lack of suitability for the best uses of the farm, the return to them over considerable periods of years is residual and practically a rent, not a cost in the usual sense. To treat such items as costs leads to artificiality and inaccuracy in the interpretation of the situation. On the other hand, their values in the most effective alternative uses can be handled as costs and can be useful aids in the analysis even though they do not represent either normal depreciation rates on the costs of improvements nor the rates of return which these are actually able to earn.

When cost items can be converted directly and definitely into money values we can measure them readily and can feel their reality, but those changing economic relationships which are not convertible into tangible quantitative figures seem less real to us, and are much less satisfying to work with though they may be almost equally significant in determining the decisions made by entrepreneurs. It seems very probable that, at least for the present, we do not have methodology developed for showing in inductive studies the many complex and shifting relationships involved when an opportunity cost analysis of competing farm enterprises is undertaken. Nevertheless, the realities of these situations which we are attempting to study lie in these relationships. Some progress may therefore be made by a clearer presentation of the nature of the relationships even though it may not now be possible to supply accurate quantitative data. Even a more or less deductive estimate of the principal characteristics of such costs as they apply to a given product may be of material aid in strengthening the synthetic method as a tool in farm management analysis.

In the study of prices, no one has succeeded in finding a way

to demonstrate statistically what the demand schedule for any given product is like at a given time. We seek to gain a mental picture of it by using historical supply-price relationships and by making various assumptions concerning it. And such inferential use of it, as an analytical tool, helps us very greatly in understanding demand and price relationships, even though the various statistical procedures applied as yet seldom agree in their results. In a similar way, it will be found impossible in many cases to apply exact figures to the type of analysis discussed in the first of these two articles. Nevertheless, a careful thinking through of these relationships with the application of quantitative data wherever possible will lead to a more realistic and, in the writer's opinion, a more productive handling of the problems of farm organization and of optimum intensity. When we cease to apply uniform rates of charge to all units of given feeds, to all units of labor, and to all units of land, we shall have taken a step in the direction of applying cost data to farm management research in a way that will be more convincing, and which will give a better understanding of the nature of the limitations to expanded or continued production. Not only do we need a fuller appreciation of the variations in the resistance offered to production from successive units of the same kind of cost element, but we need more careful identification of the different types of costs which affect agricultural production.⁵

It has often been assumed that there is some fundamental conflict between the treatment of costs used by Marshall and that developed by Davenport. As in most differences in approach, this conflict is more apparent than real. Each treatment, when placed in its proper setting, rings true.⁶ The need

⁵ For example, the usual treatment of the principle of diminishing return is limited to some one enterprise and assumes some one factor, usually land, to be fixed. The effect of adding successive units of one or more other factors to this is then followed through. These additional units are assumed to be of equal cost. Such a treatment, however, still lacks a good deal of presenting the true nature of the problem with which the farmer is confronted. Since he must consider the effects of withdrawal of land or labor and capital from competing enterprises, the costs of successive units applied to a given enterprise are not uniform if we regard the deductions from income in other enterprises as costs of using them in the given enterprise.

⁶ D. H. Buchanan has treated this problem in a different way by referring to what he terms a "product-changing margin," distinguished from the extensive and intensive margins by the fact that the extensive margin for a given crop is not where it reaches no-rent land but where it is out-competed by some other crop. (See D. H. Buchanan, "The Historical Approach to Rent and Price Theory," *Economica*, London, June, 1929, pp. 123-155). If the rental returned from the growing of the competing crop be added in as a cost the more familiar treatment in terms of an extensive and intensive margin applies.

The problem of crop competition has also been discussed in a most interesting and suggestive way by Theodor Brinkmann (see his "Die Oekonomie des Landwirtschaftlichen Betriebes" in "*Grundriss der Sozialökonomie*," VII Abteilung, Tübingen, 1922, especially in Chapter III where the relationships between enterprises are developed along entirely different lines from these, but in a way that recognizes clearly and in a quantitative way the opportunity costs involved in given lines of agricultural production). A somewhat similar consideration to Brinkmann's is to be found in Freiderich Aereboe's *Allgemeine Landwirtschaftliche Betriebslehre*, Berlin, 1923. See also the article by Heinrich Stippeler, "Philosophy of Aereboe as Related to Scope and Method of Research in Farm Management," *JOURNAL OF FARM ECONOMICS*, October, 1931, pp. 597-604.

is not for controversy about which is true and which is not true, but for more careful consideration of the conditions under which the one or the other type of emphasis is appropriate. The opportunity cost approach unquestionably clarifies the analysis of the problem which is presented to the individual entrepreneur with his limited resources. But is this any reason to assume that the more familiar prime and supplementary cost treatment of the same problem; or, if we prefer, the external and internal economy or the increasing and decreasing cost way of looking at it, are any the less true when used as a means of understanding the cost problem. On the other hand, if we leave the problem of the individual entrepreneur and seek to think in terms of the economic universe as a whole and in terms of marginal costs in each line of production, the opportunity cost view becomes largely inappropriate and meaningless. We are not then considering an individual case with certain specific resources or factors which are in some definite form or relationship to each other and which may or may not be adjusted to the general relations between such factors. For our larger universe it is assumed that prices of the various factors are continuously and fairly promptly readjusted to cover marginal costs, yields due to less than marginal costs being reflected usually in varying rental charges for the superior qualities of each factor. This adjustment is assumed to be continuous because some units of every type of factor are continually changing. No doubt that assumption has been given more weight than it merits, though it is probably close to the truth except for times when dynamic changes assume great proportions as during the industrial revolution or the period since 1914. For the individual this readjustment in the relationship between amounts and kinds of the factors of production does not occur continuously. A farmer once launched on an eighty acre farm may find it extremely difficult to change even in a period of ten or twenty years. Once having planted an orchard of Tuscan peaches he may have to continue to grow these in spite of the fact that the public has changed its preference to Elbertas. It is this fixity of resources and of relationships between resources, and this possible valuation of resources in a way not in accord with rentals available in the open market that gives to the study of the economics of the entrepreneur its particular concern with opportunity costs. But this type of approach does not in any way nullify the fact that most of the earlier developed theory of costs applies to these problems as well.

The Marshallian treatment of the substitution method is in effect the use of an opportunity cost approach, though it is not given that name and places the emphasis on the effect rather than on the cause. It has been my endeavor in these articles to clarify and emphasize the causal aspects of these same relationships.

One of the serious limitations in the use of agricultural cost figures accumulated during the past decade or two has been the assumption, often unconscious, that once these had been reduced to items in dollars and cents they were all alike as to importance and behavior. A figure representing an imputed value for the use of land or a prorated distribution of the cost of using a machine or building was looked upon as being exactly the same kind of a cost as a cash outlay for hired labor.⁷ When the unreality of this procedure became apparent there was a reaction against the use of all cost-of-production figures, and against all assignment of dollars and cents values. This possibly went too far, since it practically divorced farm management analysis from most phases of Marshallian cost theory, and did not at the same time tie it up very definitely with the Davenport concepts. The later treatment of the subject certainly contained considerable elements of the Davenport point of view, and looked out somewhat along the lines which Marshall had in mind in his brief discussion of the substitution method, a phase which he never developed very fully and which has not been very clearly related to his concepts of prime and supplementary costs, of increasing and decreasing costs, or real costs, expenses of production, etc., though these various approaches are by no means in conflict.

A first step in the clarification of the relationships mentioned above appears to be a more definite attempt to identify and define various classes of farm costs and to analyze their relations to each other, their behavior under the dynamic conditions of changing prices, and of changing stages in the development and labor force of a given farm; and to understand how such cost data may be used in improving farm management analysis along the lines of the "synthetic method." This very conceivably may lead eventually to studies of the effects upon different items of

⁷This is well illustrated in such studies as that of W. C. Funk, *Costs and Farm Practices in Producing Potatoes on 461 Farms in Minnesota, Wisconsin, Michigan, New York and Maine for the Crop Year, 1919*, U.S.D.A., Dept. Bul. 1188, 1924. Here the consideration involves various areas rather than individual farms, but for a full understanding of the relative advantages of these areas some further consideration is needed of the effects which expansion or contraction of production in these areas will have on the costs of additional units of product. Analysis carried to that point would have carried it beyond the implication that the then existing situation was in equilibrium, and would have given some indication as to where equilibrium was likely to occur; in other words, would have substituted a dynamic interpretation for a static one, a change which is essential if we are to look ahead in problems of comparative advantage.

cost which will result from expansion or contraction of given enterprises, separate studies of the nature of the cost situation for semi-long-time investments such as machinery, and still others of the opportunity aspects of cost. When these are more fully understood for various localities and conditions, syntheses of farming systems and adjustments in farming practice can be more accurately and easily made.

As an illustration let us take such a crop as potatoes. On a given farm the items of cost in potato production will be approximately the following: man labor used; seed, spray materials, use of machinery, sacking, yield and price risk, and income opportunities sacrificed in other lines of production. With expansion of the enterprise some of these costs may be regarded as constant, some as decreasing, and some as increasing. The combined effect may very possibly be first a decreasing cost and later an increasing cost. Spray materials and other supplies are likely to represent a constant cost per acre throughout. Land will tend to show, for this crop, either a constant cost; or, if the crop cuts seriously into other competing lines of production, an increasing cost. Use of machinery, viewed in one light, is likely to act as a decreasing cost; that is if a certain portion of the expense of owning it is assigned to each year. In another sense, once it is bought, it may represent almost no cost at all in terms of resistance to production, except the expense for repairs. Most such costs lend themselves to fairly definite determination and may be set up in much the usual way but should be looked at in these dynamic relationships rather than in the static sense in which farm costs are usually considered.

The other items of cost are less determinate. They depend more on what is happening in other phases of the farm business. The charge to be assigned to land is not a uniform charge per acre. Its cost in the sense here being considered depends upon what it could be made to earn if used for other crops. For a crop like potatoes which require much labor per acre, the relatively small amount of land taken away from other uses is not likely to affect them very much. Such land as can be used in this rather intensive crop will probably show a higher return per acre, labor being figured at a uniform rate, than will most of the acreage of the farm. This means that it will usually get the amounts and kinds of land best suited to it. The real limitation to its expansion will come in the available labor supply and in the price and production risks involved.

While labor is so important as a limiting factor researches

have so far brought out relatively little information concerning its changing value at different times of the year.⁸ Differences observed have generally been assigned to the crop, not to the labor. These changing values as the previous article indicated are partly of a physical and partly of an opportunity nature. The whole subject of the cost of risk-bearing in agricultural production has likewise had little study. As the investment in a given cash crop becomes larger the risk from fluctuation in the farm income; that is, the speculativeness of the business, is likely to increase both from the physical production hazards of depending on one or a very few crops, and from the income risks which result from having all the eggs in one basket. Special studies of risk may eventually make possible the placing of approximate values on such risks.

No doubt the reader will already have asked himself: supposing this to be a correct interpretation of what occurs, how can it be used in any effective research procedure? Let it be stated again that even if it should not be possible to apply definite quantitative and numerical treatment to such an analysis the work actually done by the methods in general use will be improved by a fuller and more careful qualitative analysis along these lines. But some approach to this methodology is not beyond the realm of semi-quantitative treatment, though considerable ingenuity and the casting aside of some established procedures will be needed if it is to be used. It involves a more complete analysis of each enterprise before an attempt is made to build a new plan of organization and operation. For each enterprise an approximate composite curve of changing costs with increasing extent will need to be developed somewhat in accordance with the diagram in Figure 1.

With such an analysis by enterprises it should be possible to fit these together in a way to determine much more accurately than has yet been done the highest profit combinations for different sets of resources.⁹ Evaluations of several of these items can be only approximate. Land will be evaluated in terms of the enterprise to which it would go if not devoted to the one under consideration. For minor crops this may represent practically a uniform charge for any amounts likely to be used for the given

⁸ A characteristic handling of this subject is that of J. Llefelys Davies, "Seasonal Distribution of Manual and Horse Labor on Welsh Farms," *Welsh Journal of Agriculture*, Vol. VII, 1931. The fitting together of all the "demands" for labor, as on p. 77, provides a very good picture of how this labor is used, but does not touch on the question of *why* it is so used.

⁹ The term "highest-profit combination" refers here of course, to combination of enterprises, not to the combination of factors in which sense it has been most frequently used.

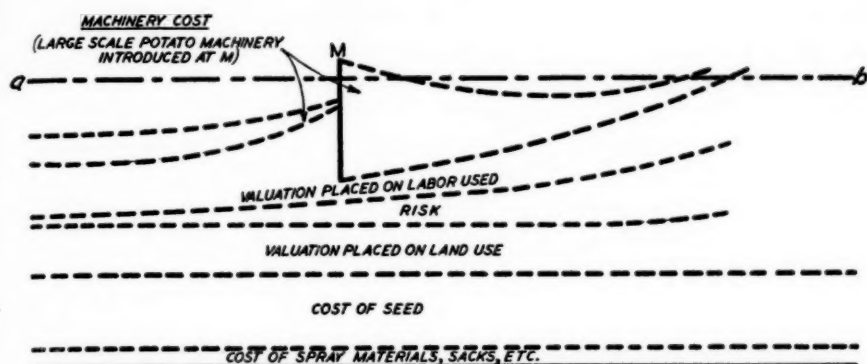


FIGURE 1.—Hypothetical illustration of changing cost per acre with increasing acreage of potatoes on a given farm: *a b* represents the estimated gross return per acre. Materials and seed show a constant cost. Land use and risk show moderately increasing costs. Machinery shows a decreasing cost. Labor shows an increasing cost per unit used, but the amount used per acre is sharply decreased by the introduction of special machinery at the point *M*.

In the case of feed crops, the gross values of the products of successive acres may not be the same.

enterprise. For major crops this curve is likely to turn up sharply as it reaches a point where it begins to cut in on certain high-value minor crops. The valuations of labor will be gauged by the conflict in certain critical periods; that is, by the values which the increase of the given enterprise seems likely to deduct from other lines of production—through limiting them at certain important periods or through inadequate care given to both enterprises at these periods. If such an analysis can be developed the limit of profitableness for each enterprise will be found where the total cost of additional units of production will reach the level of expected returns. When this can be done the marginal relationship between cost and price will be developed more nearly along the lines of Ricardian economics, though from an individual rather than from a social standpoint and in terms of expenses of production (considered in both cash and non-cash form) rather than in terms of real costs. No such marginal relationship can be demonstrated in the case of costs as developed by ordinary accounting methods. Such a procedure in fitting together the various enterprises of the farm business should provide a much clearer understanding of the numerous possible combinations lying between the rather widely different "farming systems" usually set up by the "synthetic" method.

The value to the farm business of a given kind of product may

decrease as larger amounts of it are grown even though there be no change in the physical responses to inputs nor in the external relationships and price conditions. This is due to the fact that a certain minimum amount of the product is necessary as feed for the livestock enterprises of the farm. If less than this amount is produced, the valuation of final units is the probable market price plus costs of hauling, sacking, etc., or, as an alternative, the probable loss from having to sell some of the livestock which would otherwise be held. On the other hand, for supplies of these feed crops produced in excess of the needs of the livestock which the farm has or can profitably secure, the value is the market price less the costs of hauling and preparing for market. These variations are of particular significance in the case of such bulky low-value feed crops as hay or ensilage. Thus, particularly in the case of feed crops, both demand and supply or cost factors may be operating at the same time to limit or extend an enterprise even though there may have been no change in the external demand situation. Where external factors are changing, the increase in an enterprise may be due either to a shift in the demand schedule for it, or to a drop in its opportunity costs because of a recession of profits in other lines.

A change in the conditions of the market for the farmer's labor which will serve to increase the return per unit of input either temporarily or permanently may lead him to lessen the time reserved for leisure or the irksome effort foregone. In like manner, an increase in the utility of money to him, which amounts to a lowering of the valuations in the leisure curve, may cause him to devote more labor and effort to the money-producing enterprises. The reverse situation would, of course, in like manner tend to lessen the inputs to these enterprises.

How are these decisions as to alternative procedures and organizations actually made by the entrepreneur? Obviously, he cannot know in advance either what the physical results of the input factors at his disposal will be or what prices he will get for his products. His estimates of production are, of course, based on the yields of former years. His judgment as to price relationships reflects his expectation of price based on past experience and on knowledge of what other growers are planning, on his estimate of new factors expected to influence prices, and on such aid as he can get in the more scientific forecasting of production and prices. Obviously, the results in particular years will fluctuate widely from his expectations both as to produc-

tion and prices, though the inverse relationships of these two factors will have, for farmers as a whole, some tendency to stabilize results and thus to lessen the deviations of gross incomes from those anticipated. In general, it is probable that farmers are somewhat more optimistic both as to production and prices than a purely objective view of past experiences would justify. It is also probable that they over-estimate the more erratic and hazardous crops more than they do the others. The more stable the conditions and the better the farmer's information and understanding of the problem, the more accurate will be his forecast of probable results from any given change in farm organization or operation.

It has already been indicated that analysis of the various relationships discussed will involve identifying the periods of conflict for the various crops and livestock enterprises and, in addition, a more conscious effort to work out, in cooperation with agricultural technicians, the probable physical effects of given deductions in the amounts of labor applied to the enterprises at such times. Possibly one of the most fruitful lines of farm management activity of the near future will lie in inducing agronomists and animal husbandmen to set up their investigations and secure their data along lines better suited to meeting the needs of the farm management investigator. Early activities in farm management grew out of the recognition of this field by the agronomists. It lacked at first an adequate consideration of economic principles and relationships. With its definite transfer to the field of economics serious question can now be raised if it is not slighting unduly those technical aspects which once formed so large a part of its subject matter. Certainly little effective use can be made of opportunity cost principles in any field except by those intimately acquainted with the technique of the particular lines of production. Growing out of such intimate cooperation between students of farm management and those in agronomy and animal husbandry, and in other technical fields should come a better appraisal of the financial effects of given modifications in farm practice.

Like much of the discussion of farm management problems in recent years, this paper has questioned the usefulness of the ordinary accounting procedure in analyzing the individual farm business when the object sought is the maximization of its profits. It is not meant, however, to imply that such procedure has no usefulness in some types of farm management study. In such

studies, for example as those of the equitable division of returns between landlord and tenant, it is obviously desirable to impute values to given inputs on the basis of their costs or values in the market. Here the cost figure carries some implication of an ethical distribution; of what *ought* to be the return on a given input, rather than of the resistance which given cost elements offer to further production or how these may affect the net returns of the farm. Numerous other cases arise wherein the usual accounting cost procedure has a place, sometimes a large place, sometimes a minor one. For example, where it is desired to compare a number of farms with respect to some one factor such as quality of management it is necessary to apply to certain phases of the business some sort of standardized charge which instead of varying from farm to farm will provide a uniform method of eliminating certain elements from the situation. Various other problems are continually arising in which some aspects of the usual accounting approach are useful and logical tools to use. In many of these cases, for example in many of the enterprise cost studies, there may be need for more critical scrutiny of these to see if the ends sought are really being attained, and to make sure that expediency has not weighed more heavily than accurate reflection of relationships. The situation calls, not for the general adoption of any one cost approach, but for the discriminating selection of the tools best suited to the achievement of given ends. These will vary from situation to situation. The approach here outlined is suited only to the analysis of the individual entrepreneurial unit.

Neither does the treatment of costs which has just been outlined imply a casting aside of the large amounts of cost data that have so far been accumulated. In many cases a more careful breaking down of these findings into various classes will make it possible to use them effectively. As an illustration, in a study now being made by the writer, costs are being grouped into such subdivisions as cash costs of operation, value of family labor, depreciation or maintenance cost, interest on investment in improvements, interest on investment in raw land, etc. These are, in large measure, the old accounting costs. But these different groups of costs differ in their behavior and in their determinability. In considering the problem here involved (the debt-paying ability of an irrigation district) some of these costs are more significant than others. The first three groups must somehow be covered if production is to proceed over a very long period of

time. The fourth group may or may not affect the continuance of production. The last group probably will not. Groups two and three are definitely contractible for moderate periods of time, possibly even over considerable periods. Still another element enters in in the case of groups four and five. How will the morale of the farm population be affected if there is no return to cover even a part of these items which, in their eyes, are costs? Is the price of maintaining morale, assuming it could be determined, a cost of producing the products of the area? On the other hand, while considerable information is obtainable from the cost figures which have been developed, especially from those showing physical inputs it will be found that much needed interpretative information is not available. Such technical information as that indicated earlier in this article will in most cases have been omitted entirely.

No single procedure can exhaust the possibilities of clarifying relationships such as those involved in the management of a farm. In arriving at estimates of the optimum inputs of various elements of cost used in given enterprises the procedure developed by Ezekiel, McNall, and Morrison¹⁰ seems very promising, especially as basic data are collected with a view to their usefulness in such an analysis, and as the dependability and significance of the coefficients of partial and multiple correlation come to be better understood. On the other hand this treatment does not provide the means of evaluating the various cost elements along the lines indicated in these articles though it may very well provide much help in arriving at the values of them. Also it seems likely that the diversity of conditions on different farms will always make multiple correlation treatment of problems of farm organization extremely rough and interpretations hazardous, even though the possibilities and usefulness of this method when applied to enterprise studies be unquestioned. In addition to this there seems need, in the present stage of farm management research, for a less mathematical treatment applied with fuller understanding of the cause and effect relationships involved.¹¹

¹⁰ M. J. B. Ezekiel, P. E. McNall, and F. B. Morrison, *Practices Responsible for Variation in Physical Requirements and Economic Costs of Milk Production on Wisconsin Dairy Farms*, Wisc. Research Bul. 79.

¹¹ There are many variations in the methods of studying farm management problems. The following studies and discussions illustrate some of the approaches used but make no pretense at completeness:

H. M. Dixon and H. W. Hawthorne, *A Method of Analyzing the Farm Business*, U.S.D.A., Farmers' Bul. 1139, 1920;

H. R. Tolley, J. D. Black, and M. J. B. Ezekiel, *Input as Related to Output in Farm Management and Cost-of-Production Studies*, U.S.D.A., Dept. Bul. 1277, 1924;

Not the least of the benefits which might be derived from a more realistic approach to the problem of farm costs as here outlined would be a better understanding of the elasticity of supply for given products. The types of cost here indicated have a direct relationship to the supplies farmers will undertake to produce, though this relationship involves a constantly changing cost situation and though the expected price to which the farmer seeks to adjust may differ considerably from the actual price. Also the physical production may of course vary a good deal from that counted upon. In general, however, the farmer judges costs in this light, insofar as he is able to recognize the relationships here discussed.

Supply curves for various farm products have so far been studied almost wholly from a national standpoint and generalizations have been made on the assumption that farmers will continue to react to price changes in the same way that they did during the period under study. There has been little attempt as yet to examine back of this simple and inaccurate assumption to see what really does govern the farmer's assumption as to future price. His past experience undoubtedly has something to do with it, but a high price for one or two years may act as a deterrent rather than a stimulus to certain groups of farmers, how large a group no study has thus far revealed. Historical study of the behavior of individual farmers under given price situations and of their psychological reactions to given stimuli will eventually throw more light on this interesting phase of price theory and outlook practice.

Like the more usual approach to the synthesis of farming systems the analysis suggested is primarily case study. Its wider applicability rests solely on identifying a similarity of condi-

G. A. Pond, *A Study of Dairy Farm Organization in Southeastern Minnesota*, Minn. Tech. Bul. 44, 1926;

C. A. Bonnen and J. B. Hutson, *Profitable Farming Systems for East Central South Dakota*, S. Dak. Bul. 226, 1927;

M. L. Wilson, R. H. Wilcox, G. S. Klemmedson, and V. V. Parr, *A Study of Ranch Organization and Methods of Range-cattle Production in the Northern Great Plains Region*, U.S.D.A., Tech. Bul. 45, 1928;

D. S. Fox, *An Analysis of the Costs of Growing Potatoes*, Cornell University, Memoir 22, 1919;

E. G. Misner, *Relation of the Composition of Rations on Some New York Dairy Farms to the Economics of Milk Production*, Cornell University, Memoir 64, 1923;

J. C. Neethling, *Economic Studies of Dairy Farming in New York*, IX, Cornell Bul. 483, 1929;

J. B. Hutson presents a brief summary of methods in the introductory section of his study, *Progress in Development of the Budgeting Method of Planning in Agricultural Economics*, Washington, 1930, see pp. 15-20. A fuller discussion will be found under "Methods of Analysis" in the handbook on *Research Method and Procedure* published by the Advisory Committee on Economics and Social Research in Agriculture of the Social Science Research Council, Washington, 1928.

Research in Farm Management—Scope and Method, prepared under the direction of the Advisory Committee on Social and Economic Research in Agriculture, Social Science Research Council, N.Y., 1932, presents most of the research procedures now used in farm management study.

tions and resources between the specific farms studied and large groups of farms in the area. If the farms of the area can be classified into a relatively few groups each having for the farms in it a rather standardized set of resources both as to quantity and as to quality, such studies can be applied approximately to considerable numbers of farms. To do this will require a consideration of farming types within a given area rather than a designation of an area in terms of its predominant farming type. Where such case studies of representative farm types in an area approach completeness it will be possible not only to indicate suitable farming systems and practices or intensities but to present a much more accurate picture of probable supply response to given price situations than can now be done.

The study of costs in farming is admittedly more difficult than in many other lines of production. A large part of the cost on many farms is a non-cash cost and one which varies from one unit of product to another much more than in most industrial enterprises. Nevertheless it does not appear to the writer that the tendency of many farm management students in recent years to avoid all mention of cost terms is altogether a wholesome one. What seems to be needed is a more definite attempt to deal with farm costs in a realistic way and to use some form of cost analysis as the basis on which a better and more authoritative synthesis can be built. Research is primarily analysis. Synthesis carries us more or less into the realm of forecast and opinion. Opinion and forecast can be useful and accurate only as the preceding analysis is thorough and sound. Can it be so without a more detailed analysis of the economic and physical relationships of the farm business than prevails in current farm management practice?

THE BRITISH AGRICULTURAL MARKETING ACT

H. J. WADLEIGH

I

In July, 1931, an act was passed by the British Parliament entitled "The Agricultural Marketing Act," the aim of which is to prepare the way for social control of agricultural marketing. This law permits the producers of any agricultural commodity, by means of a two-thirds majority vote, to place the entire marketing of their product under the control of an organization elected by themselves.

If the producers of a commodity wish to set up such an organization, they must first submit to the Minister of Agriculture a "scheme" to regulate the marketing of their product (except that schemes applying to Scotland are submitted to the Secretary of State for Scotland). Such a scheme must provide for the creation of a "board" to control marketing, must define the powers and duties of the board, and provide for the election of its members by producers. If the Minister approves of the scheme and is satisfied that the persons submitting are substantially representative of the producers of the commodity, he is to submit it to Parliament, and if the scheme is approved by Parliament, it acquires the force of law.

A note by Mr. R. C. Hinton published in the *JOURNAL OF FARM ECONOMICS* in January, 1931, describes one of the earlier drafts of the bill which became the Agricultural Marketing Act. Many of the principal features of the Act are outlined in Mr. Hinton's note, but certain changes were made after the note was written and before the bill became law. The scope of the measure was considerably enlarged. Instead of being applicable to certain specified products, as in the earlier drafts of the bill, the Act applies to

any product of agriculture or horticulture and any article of food or drink wholly or partly manufactured or derived from any such product, and fleeces and the skins of animals.¹

Thus the scope has been extended to all agricultural products in the raw state as well as a wide range of processed commodities. A board under the terms of the Act could own and operate a meat packing plant, which would not have been possible under the terms of the bill in its earlier form.

¹ Section 18 (1).

Furthermore, an important provision was added after Mr. Hinton's note was written, to the effect that after a scheme has been approved by Parliament and has therefore become legally effective, it must, before it can come into operation, be submitted to a vote of the producers. It may come into operation only if those voting in its favor constitute a two-thirds majority of all persons voting and their productive capacity is at least two-thirds of the productive capacity of those voting. Moreover, if it is proved to the satisfaction of the Minister within a given interval of time after the vote has taken place that less than half of the producers of the commodity took part in the voting, the Minister is required to revoke the scheme.

II

It is obvious that under a system of compulsory cooperative organization certain things are possible which rarely, if ever, could be done by purely voluntary organizations. Although voluntary cooperative organizations have in a few cases acquired a fairly effective monopoly of the facilities of distribution for their commodity, the threat of competition is always present in a greater or less degree, and is almost certain to hamper attempts at surplus control or the manipulation of prices.

The extent to which boards organized under the Act will be able to control prices will vary considerably from one commodity to another. The Act permits a board to exercise control over the marketing only of supplies produced in the area to which its scheme applies. Schemes may apply either to the whole or a part of Great Britain. Imported supplies can therefore not be made subject to control under the Act; and there are only a few agricultural commodities in which Great Britain is approximately self-supporting, and the price of which in Great Britain is therefore dependent, to any considerable extent, on the quantity produced within the country. Where a substantial part of the consumption of any commodity must be imported, its price will be influenced by the world supply, and the domestic supply (unless it forms the greater part of the world supply) cannot be a controlling factor. This is true with a tariff as much as under free trade; only by quantitative limitation of imports (that is to say, only by directly controlling imported supplies) will it be possible to exercise direct control over the quantities available for domestic consumption. As is indicated below, the present British Government contemplates some such action in

the case of hogs and hog products, which would not be possible under the Agricultural Marketing Act alone, and would require further legislation.

Where domestic prices are to any considerable extent independent of foreign supplies, however, as in the case, for instance, of milk, potatoes, and hops, a substantial measure of price control will be within the powers of boards set up under the Act. These powers will differ widely in different cases, since the powers of a board are to be defined in the scheme which it administers, while the Act only lays down certain general rules. There will, in fact, be more than one way in which a board may exercise control.

First of all, in order to exercise control over the marketing of its commodity, it will not be necessary for a board actually to buy and sell the commodity. A scheme may empower the board to regulate the manner of sale of the commodity by determining

- (1) the kind, variety or grade of the product which may be sold;
- (2) the price at, below or above which, the terms on which, and the persons to, or through the agency of, whom, the product . . . may be sold.²

A scheme may also provide for

regulating the manner in which the regulated product . . . is to be graded . . . marked, packed, stored, adapted for sale, insured, advertised or transported by or on behalf of registered producers.³

A board may thus be empowered to exercise a more or less complete control over the organization of the marketing of its commodity without actually engaging in trade. A voluntary cooperative organization, on the other hand, could acquire such control, if at all, only by a practically complete elimination of private traders from the field. According to a report (Orange Book) on the Act issued by the Ministry of Agriculture

the intention of the Act is not to supersede existing distributive or manufacturing agencies, so far as they are efficient and economical, but rather that producers should set about the organization of their marketing in *cooperation* with them.⁴

There are, in fact, three types of board contemplated in the Act, according to the Orange Book.⁵ There is first the trading board, which would handle the commodity in question; it would have sole power to purchase from producers, and would have

² Section 5.

³ *Ibid.*

⁴ Orange Books on Marketing; Economic Series No. 33, Ministry of Agriculture and Fisheries, p. 10. This report, which is entitled an "Orange Book" from the color of its cover, describes the provisions of the Act in a far more intelligible way than does the Act itself.

⁵ Pp. 27 ff.

power to perform the various functions pertaining to marketing such as transporting, storing, insuring, and also to process food products. It could, for instance, own and operate a meat-packing plant. The second type is a regulating body, which merely issues instructions as to how the commodity is to be sold. The third type is one which would have both regulatory and trading functions. It might, for instance, merely regulate the sale of the commodity in the primary consuming market, while at the same time operating a pool for the sale of a surplus in secondary channels of utilization. Such a board might, for instance, regulate the sale of fluid milk and purchase the seasonal surplus for the manufacture of dairy products.

In England, cooperative marketing has made very little progress thus far. It is clear that in the absence of the provision for cooperating with existing agencies any rapid extension of producer's control over marketing would be impossible without a catastrophic disruption of existing agencies, some of which may be operating efficiently.

All three types of board will clearly be able, where their schemes permit, to exercise much greater control of supplies and prices than any voluntary organization. The power to regulate the intra-seasonal distribution of the flow of supplies is obvious. But the principal advantages of the compulsory type of organization lie in the prevention of excessive price declines due to seasonal surpluses or the prevention of the surpluses themselves. When the supply of a regulated commodity exceeds the normal requirements of its principal market, the board will be able to divert the excess into any secondary channels in which it may be sold at a lower price, in such a way that this lower price will not govern the price of the whole output. The Orange Book⁶ suggests, for instance, that a surplus of potatoes might be diverted into manufacture or export.

As regards the prevention of surpluses, a board cannot be empowered under the Act to exercise any direct control over production. But it may, as the Orange Book again suggests,⁷ control sales in such manner as to impose a penalty on producers for the production of excessive amounts. The Orange Book does not indicate specifically how this may be done, but probably the most, and perhaps the only effective method would be that of allotting to each producer individually a specific amount which

⁶ P. 32.

⁷ P. 83.

he may sell at a favorable price, and allowing excesses above these amounts to be sold only at relatively unfavorable prices. This is the principle embodied in the "Domestic Allotment Plan" which is discussed in Chapter X of J. D. Black's *Agricultural Reform in the United States*.

An application of this principle was provided for in the first draft of the scheme for the marketing of hops, which is described below. If this provision had been included in the scheme in its final form it would probably have been the first time that the principle had ever been put into effect.

III

Boards may be empowered to take steps which will tend to improve the efficiency of production as well as of marketing. The Act states that boards may engage in research, and the Orange Book indicates that this might "include experimental work with the object of discovering an earlier maturing variety or exploring new systems of storage."⁸ Education is another field of activity in which a board may engage. It is easy to see that an organization of this kind, possessing such powers, would be in a position to effect a substantial lowering of production costs by instructing its constituents in methods of production not familiar to them, whether they have been invented by the research staff of the board itself, or adapted from elsewhere.

A board may also purchase and sell to its constituents any supplies used in the production or marketing of its product. This provision also may affect costs of production, although it is likely to be of minor importance since the trade in agricultural requisites in Great Britain is already well organized, largely on a cooperative basis.

The words of the Act itself suggest that its power to influence production is not regarded as of minor importance. The Minister of Agriculture may recommend a scheme for approval by Parliament if he

is satisfied that the scheme will conduce to the more efficient production and marketing of the regulated product.⁹

A board may conduct what is known in this country as outlook work. Included among the powers which, according to the Act, a board may possess, is

⁸ P. 35.

⁹ Section 1 (8).

requiring registered producers to furnish to the board such estimates, returns, accounts, and other information relating to the regulated product as the board consider necessary for the operation of the scheme.¹⁰

This will enable a board to collect statistical information which may be of value to producers in marketing and in planning the production of their commodity. Combined with the power to engage in research and educative propaganda this should give a board the opportunity to conduct outlook work similar to that which is being done by the Department of Agriculture in this country.

Finally, boards may take steps to encourage agricultural co-operation. It may seem curious that an organization which is itself a kind of a cooperative should encourage the formation of other cooperatives. But, according to the Orange Book,

A board will require local agencies to assist in the execution of its marketing plans, and will naturally turn to existing cooperative undertakings, or, if these are lacking, may desire to assist in their creation.¹¹

In this respect the board may be compared to the national and regional sales agencies of cooperatives which have been set up since the passage of our Agricultural Marketing Act.

IV

In view of the compulsory and monopolistic character of the powers which boards are likely to possess under the Act, it is reasonable that there should be protection both for the individual producer and for the consumer against unfair treatment. The individual producer is protected mainly by the provision for arbitration which is mentioned in Mr. Hinton's note. The Act aims to protect the consumers (a) by allowing the Minister of Agriculture to exercise, subject to the approval of Parliament, a power of veto affecting both the terms of a scheme and any actions taken by a board; (b) by giving consumers, as well as other interests, the opportunity of expressing their objections to any provisions of a scheme or actions of a board, and making it the duty of the Minister to investigate such complaints. Mr. Hinton has mentioned the Consumers' Committee and the Committee of Investigation which the Minister is directed to appoint. The function of these committees is to make recommendations to the Minister on any action taken by a board which is contrary to the interests of the consumer or gives rise to complaints. In

¹⁰ Section 5 (h).

¹¹ P. 34.

this way the administration of schemes already in operation may be subjected to careful supervision. The Act also provides methods by which a scheme may be exposed to effective criticism before it comes into operation. Before the Minister approves a scheme which has been submitted, he must have it published in such a way as to give interested parties the opportunity to express their views on it. If any objection to a scheme is made at this stage and not withdrawn, the Minister is to appoint "a competent and impartial person" to make a public inquiry into the objection. The Minister need not, however, have a public inquiry made into an objection which he considers frivolous.

These provisions should be sufficient to prevent the interests of any group which might be injured by the actions of a board from being entirely overlooked. Since, however, it rests with the Government to decide what action, if any, should be taken on any matter which has given rise to complaint, the protection of individuals and the public against unfair treatment by a board will depend ultimately on the effectiveness of public opinion in compelling the Government to act justly.

It will, of course, always be possible for persons who feel themselves injured by any action of a board to seek redress in the Law Courts. But the latter will be able to interfere only by holding that a board's actions are not in accordance with the scheme which the board is administering; for the scheme itself, once it has been approved by Parliament, has the same force as an Act of Parliament, which the Courts (in contrast to the situation in this country) cannot question. The Act expressly provides that a scheme when approved shall itself have the force of law and therefore not be open to question in the law courts, and the Orange Book comments:

The confusion which would arise if a scheme were suddenly to be ruled illegal after it had been in operation any length of time, can readily be appreciated; in fact, it would be impracticable to set up a board with extensive powers of holding property, incurring liabilities and, perhaps, of trading, if the Courts could hold at any time that the scheme, and, indeed, the very existence of the board had been a nullity from the start. It will therefore be the duty of the Minister and of Parliament to make sure that a scheme conforms to the Act and that the provisions of the Act are complied with.¹²

The Courts may, however, rule that a scheme is *ultra vires* (that is, not within the powers conferred by the Act) before it has been approved by Parliament, and thus prevent the Min-

¹² P. 17.

ister from proceeding any further with it. The legality of the scheme for the marketing of hops (which is described below) was questioned in a recent court action, but the decision of the Court was favorable to the scheme, and the Minister was able to submit it to Parliament for approval.

V

The functions of the Government under the terms of the Act are not confined to the exercise of restraint on producers. There are two ways in which they may help them, namely by granting loans and by providing technical assistance in the preparation of schemes.

The Government may make both long and short term loans to a board. Short term loans are to be for the purpose of enabling the board to pay the expenses of its initial organization, including the vote of the producers on whether the scheme is to come into operation. They are to be repaid out of the board's operating revenues. If, however, the result of the producers' vote is not favorable to the scheme, there will be no operating revenue, and the Act provides that in such a case the loan will not be repaid.

Long term loans may be made in order to provide a board with any fixed capital which it may need. The amount authorized for this purpose, however, is small (£150,000), and it is expected that boards will be largely self-supporting. Their current revenue will be obtained by contributions from producers, which will be deducted from the price paid to producers in the case of trading boards, and levied directly in the case of regulatory boards. Their capital will be obtained mainly by loans (since boards will issue no stock). The borrowing powers of these boards will presumably be greater than those of a voluntary cooperative organization, because of their statutory power to raise contributions from producers. Trading boards may borrow on the security of the commodity which they handle.

VI

The Act has now been in force for about one year. Thus far only one scheme has come into operation, and it could hardly be expected, in view of the numerous obstacles to be overcome, that much more should have been done. Preparations are under way for putting several other schemes into effect. Before we describe

these developments, however, some attention will be given to the political and economic background of the Act.

The few attempts hitherto made among British farmers to develop cooperative marketing have in most cases been conspicuous failures. Perhaps in no civilized capitalistic country has cooperation played so insignificant a part in agricultural marketing. It is generally admitted that this is due in the main to the conservative and individualistic temper of the British farmer. In contrast to this is the attitude towards cooperation of the Labor Party, which was in office when the Act was passed. Although it would be far from the truth to suggest that the development of agricultural cooperative marketing in the world has been associated to any considerable extent with the ideals of the Labor and Socialist movements, yet it is true that Socialists all over the world have welcomed the development of cooperative marketing organizations, advocated their further development, and urged their formation where they do not exist. Agricultural cooperative marketing is one of the few questions of social policy on which socialists are in agreement with a large section of opinion outside of their own ranks. It is perhaps significant that the Agricultural Marketing Act was about the only piece of important constructive legislation put into effect by a socialist government which did not have a majority in the House of Commons.

The Act, then, was an attempt on the part of a government with a belief in cooperative marketing to encourage its development among a farming population which has never given much support to it. But, as has been indicated above, the Act attempts to go further than the type of cooperative marketing which has hitherto been developed along voluntary lines in other countries. In so far as it does this its policy is definitely in line with the present trend of socialist thought in England. British Socialists are apparently by no means in favor of "nationalization," if by that term is meant the direct control of an industry by the central government, as in the case of the postal systems of most countries. What most of them now advocate is the control of each industry by a semi-independent board representative, either wholly or in part, of producers (which in the case of manufacturing industries would consist mainly of labor); while consumers and the central government would either have representation along with the producers or would have powers of supervision. The proposals of the Labor Party for the reorganization of the coal-mining industry are the most outstanding ex-

ample of such a plan. The boards which are to be set up under the Agricultural Marketing Act will be organized along somewhat similar lines.

Such being the political background of the Act, it is not surprising that a large part of the farming population of England should have treated it with suspicion if not hostility when it was under consideration and accepted it grudgingly after it had become law.

The principal objections raised against the Act in agricultural circles and by the Conservative Party were two. In the first place they complained about the compulsion which would be exercised by the boards on individual producers. Secondly, they claimed that without control of imports or a tariff the Act would be ineffective in raising prices, since it provided no method of dealing with foreign competition. This objection is comparable to the attitude towards our own Agricultural Marketing Act of those who advocate the Export Deventure or Equalization Fee plans. In both cases a law which seeks to raise the farmer's price or the farmer's returns by the reorganization of marketing without substantially raising the price to the consumer is attacked by people who want to raise the price all round. In both cases the interest of the consumer is at stake, and the gain to producers is likely to be less in the long run than in the short run.

A point of view which must have been prevalent at least among the more conservative farmers when the Agricultural Marketing Bill was under consideration in Parliament was expressed by the President of the National Farmers' Union at a meeting of the delegates of the organization in London on January 14, 1931. He said:¹³

It is perfectly clear that if the Agricultural Marketing Bill becomes law, then the producer of any product which comes to be regulated under the Act will be deprived of the control of his own capital, and will be forced to assume serious financial liabilities without any guarantee of a market or a remunerative price for his produce.

I do not know of a single responsible agricultural organization throughout the length and breadth of Great Britain that is prepared to endorse the proposals and principle that handicaps should be placed upon home production in favour of foreign imports, which is all the Bill would achieve if ever it should be brought into operation.

The trouble is that, however much we may desire to be rid of politics in connection with the work of the Union, the matter is now not within our own control, and no one knows better than the present Minister of Agriculture that our costs are maintained against falling prices by the action of the legislature in imposing State

¹³ Quoted in a consular despatch: *The British Industrial Outlook*; Jan. 31, 1931: From Alfred Nutting, Clerk, American Consulate General, London.

control upon the largest single item of the farmer's outgoings, namely labor costs, and that our difficulties are further increased by free imports.

The National Farmers' Union draws most of its membership from the larger-scale farmers of England, and it was among these that the opposition to the bill was most widespread. Those with small farms were more generally in favor of it, and the Scottish farmers were solidly behind it. That even in England a not unsubstantial section of those employed or interested in agriculture considered that the bill might be of some benefit is perhaps attested by the following fact. At a meeting of the Council of Agriculture for England (a semi-official organization representing agricultural interests) held in London on October 31, 1930, a resolution was passed on the subject of the bill which was not unfavorable.¹⁴ In regard to the compulsion on minorities, the resolution stated that the bill was in line with previous legislation relating to the grading and marking of produce; and pointed out that the bill would not impose anything on producers except on the initiative of groups substantially representative of producers. It pointed out that the bill would be useful in the case of commodities in which the country was self-supporting, but urged that it be coupled with some form of import control in order to extend its usefulness to a wider range of products.

VII

Shortly after the Act was passed the Labor Government, which had sponsored it, went out of office; the succeeding government, now still in office, is largely dominated by the Conservative Party, which opposed the passage of the Act. The new government has not, however, refrained from making use of its provisions. A scheme for the marketing of hops has been approved both by Parliament and by the necessary majority of producers; its marketing provisions became effective on September 6, 1932. Two schemes for Scotland have been submitted to the government. One of these applies to raspberries, the other to milk. Several other schemes are being prepared.

The Hops Scheme applies to a commodity of which the price in England is largely dependent on the domestic supply. There is some importation of hops into Great Britain but the quality of the imported hops is different from that of the domestic product, and competition between the two is therefore limited. Producers have for a number of years been suffering from low prices due in large part to a steady decline in the consumption

¹⁴ *Journal of the Ministry of Agriculture*, December, 1930.

of beer. Various measures have been taken to meet this situation, but apparently without affording much relief to producers. A tariff has proved ineffective and attempts on the part of producers to combine for the purpose of limiting supplies have failed owing to the refusal of a minority to cooperate.

Such was the situation when the Hops Scheme was submitted to the Minister of Agriculture on March 8, 1932. The original scheme¹⁵ was prepared by the Farmers' Union, which had recently undergone a change of attitude toward the Marketing Act. The Scheme applies to England (Wales and Scotland not being included) and provides for a board of the trading type. The fourteen members of the board are to be elected annually, except that until May, 1933, the Board is to consist of persons named in the Scheme. For purposes of election the country is divided into seven districts, each district electing one to three members.

Producers are to be paid for their hops in accordance with the principle of the seasonal pool; that is to say, the net proceeds of the sale of hops by the Board in any season will be distributed among producers in proportion to the quantity that each has delivered to the Board during that season. The remuneration of a producer will therefore not depend directly on the price obtained by the Board for hops delivered by him. Payments will, however, be adjusted for differences in quality. The Board may advance to a producer an amount not exceeding two-thirds of what it estimates he will receive for the hops which he will deliver.

For the purpose of limiting supplies the Board is empowered to destroy or render unfit for brewing any hops which it is unable to sell within a reasonable time. Hops rendered unfit for brewing will presumably be sold for some lower order use. This provision is comparable to the expedient which has been used in some European countries of coloring rye or wheat with a non-poisonous dye which renders it unfit for bread-making but not for feeding to livestock. It is conceivable that the method used by the Hops Board will be similar.

When the scheme was submitted to the Minister it contained the provision for indirect limitation of production which is mentioned in an earlier section of this article. A quota was to be fixed, for each producer, relating to the hops delivered by him to the Board. This did not mean that a producer's deliveries

¹⁵ *Scheme Under the Agricultural Marketing Act, 1931, Regulating the Marketing of English Hops*, published by the National Farmers' Union, 45 Bedford Sq. W.C.1.

would be limited to the amount of his quota, but that quota hops would receive preferential treatment, and non-quota hops be sold only in so far as there was a demand for them after all the quota hops had been sold. A producer's quota was to be based on the amount of hops grown and picked on his land in the preceding season, except that if a producer's crop was damaged by natural causes and through no fault of his own, his quota was to be based on an amount equal to two-thirds of what would, in the opinion of the Board, have been picked in the absence of such damage. The Board was to determine the total quantity of quota hops each year in the light of the market demand and to allot this amount among producers in proportion to the amounts on which their quotas were based.

After the scheme was submitted, a producer petitioned the courts for a ruling to prohibit the Minister of Agriculture from proceeding with the scheme. The court ruled that the Minister was acting within his powers in proceeding with the scheme.¹⁶ This ruling was upheld in a higher court.¹⁷ Meanwhile, twenty-five objections against the scheme were submitted to the Minister and, in accordance with the Act, a public inquiry into these objections was held. As a result of this inquiry the Minister made some modifications of the scheme, the most important of which was the elimination of the quota feature. The latter is still, however, being advocated, and it is possible that it may be reintroduced at a later date.

The scheme was approved in its amended form¹⁸ by Parliament early in July, and the producers voted in favor of it by more than the required majority early in August. It is expected to come into operation in time to deal with this season's hops.

The Minister of Agriculture appointed two Agricultural Reorganization Commissions in May, 1932, one of which was directed to prepare a scheme for milk for England and Wales, the other a scheme for hogs and hog products for Great Britain.¹⁹ The Commission appointed to prepare the latter scheme was also directed to

investigate the manner in which its (i.e., the scheme's) operation would be facilitated by the quantitative regulation of imports of pigs and bacon and by similar or different measures affecting other pig products.²⁰

Such measures are not, of course, within the terms of the Act

¹⁶ *Journal of the Ministry of Agriculture and Fisheries*, July, 1932; p. 358.

¹⁷ *The Times*, July 7, 1932.

¹⁸ *Statutory Rules and Orders, 1932*, No. 505. Agricultural Marketing. Hops. Issued July 7, 1932.

¹⁹ *Journal of the Ministry of Agriculture and Fisheries*, June, 1932.

²⁰ *Ibid.*

and would require further legislation. But the latter would be consistent with the present Government's protectionist policy.

As has already been indicated, the Act before and at the time of its passage received far more widespread support among farmers in Scotland than in England. The development of co-operative marketing in Scotland has been assisted by the Department of Agriculture for Scotland (which is independent of the British Ministry of Agriculture) during the last twenty years. The Department makes an annual grant of funds to the Scottish Agricultural Organization Society which has been active in promoting the development of several cooperative marketing organizations. After the passage of the Agricultural Marketing Act it was decided that the Society should use part of its annual grant in preparing a scheme for raspberries and one for milk.²¹ These schemes have recently been completed²² and submitted to the Secretary of State for Scotland.

The two Scottish schemes are very similar. Members of the boards are to be chosen by a Selection Committee, elected by the registered producers at their annual meeting. Each year one-third of the members of the Raspberry Board and one-quarter of the members of the Milk Board are to retire from office, but they may be re-elected. Both boards may exercise both regulatory and trading functions, the latter including the processing of the commodity. Where the board does not itself handle the product it will fix the price, and payment will be made by the purchaser to the board and not to the producer. The board, after deducting its own expenses, will distribute the proceeds among producers, paying a uniform price for each grade of product. In addition to regulating the terms of sale, each board has the power to determine to whom a producer may sell. Producers of raspberries who sell directly to consumers are exempted from the scheme, except that they may not sell below a price determined by the Board and must report all such sales to the Board. Producers of milk who sell directly either to consumers or to retailers are exempted from the milk scheme, except that they must contribute in proportion to their sales to the funds of the Board.

Both the boards may engage in research, education, and the development of cooperative marketing; both will require producers to supply information as to their production and sales

²¹ *Twentieth Report of the Department of Agriculture for Scotland* (1931), p. 59.

²² *Scheme for the Regulation of the Marketing of Raspberries in Scotland; Scheme for the Regulation of Marketing of Milk in Scotland*. Both published in 1932 by the Scottish Agricultural Organization Society, 5 St. Andrew Sq., Edinburgh 2.

and as to acreage in the case of raspberries and the number of their cows in the case of milk.

Both milk and raspberries are consumed not only in the raw state but also in several processed or preserved forms and in the case of each commodity there would seem to be an opportunity, profitable for producers, to charge different prices for the product in its various uses. Neither scheme, however, contains anything to suggest that such a policy will be pursued by either of the two boards.

VIII

The British Agricultural Marketing Act may usefully be compared with the act of the same name which was passed in the United States two years before the British Act became law. The purposes of both are very similar, and it is reasonable to suppose that those who drafted the British Act carefully studied its American counterpart. The aims of both Acts are (a) to secure producers' control over the marketing of agricultural products; (b) to maintain prices through the control of supplies, or at least to prevent overproduction from leading to excessive price declines. The methods used in the two acts to realize these aims are, on the other hand, very dissimilar. The American act relies almost entirely, if not entirely, on the lending powers of the Federal Farm Board, whereas in the British Act the lending powers of the Government are merely subsidiary to its powers of granting monopolistic and regulatory powers to the commodity boards.

For the purpose of price maintenance the British law is clearly a far more potent instrument. It permits as complete a monopoly as the market and the political power of consumers will allow. The American law provides for the purpose only the withholding of supplies from the market by stabilization corporations; and this expedient does not seem likely to offer producers any prospects of a substantial net gain even when it is not hampered by a decline of the general price level. It is doubtful whether it would be relevant to mention here the provision in the American Agricultural Marketing Act for price insurance (which has not yet been put into operation and perhaps never will be) since this merely aims to balance the losses of one year against the gains of another. Some sanguine minds have hoped that, partly through the assistance of the Farm Board, the co-operatives would eventually reach a position where they could dominate the market through the control of supplies. The weak-

nesses of such control by voluntary organizations, faced with potential where not with actual competition, have already been pointed out.

It seems quite possible, nevertheless, that the future achievements of the British Act in maintaining or raising prices will be little, if at all, more significant than those of the Federal Farm Board. But if this is so, it will be because of the position of Great Britain as an importing country, and the interests of consumers. If methods were made available by legislation in the United States similar to those in Great Britain, the effects upon our whole price structure might be very noticeable; for the supply of nearly all agricultural commodities produced in this country is or could be made to be a dominating influence on the domestic price. Nor does past experience suggest that consumers would be adequately protected.

The difference in effectiveness is perhaps not so great in securing producers' control and management of marketing. The extension of the latter in this country through the influence of the Farm Board can, of course, only be gradual, but every extension of producers' control involves a corresponding *elimination* of private trading. Moreover in the first three years of the Board's activity there has been an extension of cooperative marketing under conditions which might otherwise have weakened the movement as has happened in Canada. It seems possible on the other hand that the effect of the British Act will be in many cases not to eliminate the private trader but to crystallize the existing organizations in their present position. It seems likely, especially in view of the safeguards in the act against unfair treatment, that the new boards will be forced to come to terms with the private trade and regulate rather than supersede it. Both reason and experience show that when once a public authority has been entrusted with the regulation of private enterprise it has in some degree committed itself to its protection. A board with combined regulatory and trading powers may regulate private traders at first in the hope of promoting cooperative organizations which will eventually take their place. But it is not certain that such a policy will hasten the replacement of the private traders by cooperatives; for the regulatory activities of the board are likely to compel the private traders to operate more efficiently, thus strengthening their ability to compete with cooperatives, while the law courts and perhaps the Government will tend to protect them against steps taken by the board with a view to their elimination.

AN AMERICAN PIONEER IN INTERNATIONAL AGRICULTURE

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In the early eighties, a successful California merchant bought a farm. To his surprise the business ability which made him a successful merchant failed to make him a successful farmer. He became perplexed. This was the beginning of a surmise that something was wrong with agriculture. His department store was one of the early mail order houses of the West. As a mail order concern it enjoyed considerable business in the rural districts. The store experienced a trade depression. The sale of overalls underwent a marked decline. Being of an inquiring turn of mind this merchant set out to discover the causes of agriculture's distress.

During the early stages of his self-appointed task he became convinced that transcontinental freight rates resulting from unregulated monopoly control explained in a large measure the chronic deficit on his fruit-growing activities. Further explorations for evidence tempered with no small amount of economic reasoning brought him to the conclusion that agriculture was unduly burdened with the necessity of purchasing its supplies on a tariff protected national market, while at the same time it was forced to sell its staples upon an unprotected world market. As a remedy for this inequality he advocated a bounty on agricultural exports. Recent, and one may add present, legislative proposals in the United States have revived this creed. The exports debenture is an export bounty in another garb. The present-day arguments have a striking similarity to those advanced by this Californian in the presidential campaign of 1896. The issue of 1896 is little different from that of 1932. Where one man fought alone, unsupported, thirty-five years ago, thousands have adopted and enlarged upon his thesis.

But our merchant-farmer found that freight rates and the tariff alone did not explain the difficulties. He had sold a losing fruit farm and purchased what turned out to be a losing wheat ranch. This experience centered his attention upon world price-making forces. Every time this wheat grower read the Liverpool quotations and compared them with the price he received at the home town elevator, he became more zealous in his desire to know the reasons for the vast differences. San Francisco exporters said that steamship charters furnished the key to the knotty prob-

lem. "Steamship charters" was a mysterious term to this wheat grower. It offered a fertile field for exploration. The exporters explained that ocean freight rates were continually changing. One week they may be 50 per cent higher than the week before. There were no regulations on these carrying charges other than those imposed by competition. It was suggested that, perhaps, competition did not always exist, or at best worked rather badly. Certainly this was a matter that should be remedied. But fluctuating ocean freight rates were not enough to explain the "why" of the Liverpool prices.

Persistent cross-examination of learned professors and others brought out the accepted theory that prices of most commodities depend in a large measure upon what many people designate by the meaningless term "supply and demand." Fortunately, the demand for a commodity such as wheat, for example, was fairly well known from past experience. It did not undergo violent changes within short periods. But supply—ah! that was a different story. It was difficult, indeed, to know the supply. Supply was that amount offered for sale, plus that amount which buyers and sellers thought existed and was potentially available for sale, plus the amount which buyers and sellers thought the growing crops would make available for sale within the near future. Hence supply was evidently composed of a goodly element of what people thought. The less information there was upon stocks, acreage sown, and the condition of the crop in all parts of the world, the more guess there was in the forces setting the price of wheat. Unfortunately, the farmers growing the wheat had little or no information, hence their operations were based largely upon guess. Furthermore, the most complete information on the actual and potential supply was privately collected by a few large operators and used, of course, to their own advantage. It was no radical departure for one to conclude that the farmers of a nation should have a more reliable basis for planning their sowing and breeding enterprises than that furnished by custom or unadulterated chance. The logical conclusion was that the concentration of the knowledge of world crop conditions in the hands of a few dealers was not a good thing for agriculture. Furthermore, existing machinery for collecting this price-influencing information was faulty and incomplete. The information itself was unreliable. It should be extended in scope and improved in accuracy. Above all, its vital connection with the welfare of all mankind demanded that it be public property.

But our agricultural Diogenes was impressed by an additional fact. Extensive reading and wide travel had convinced him that the farmers of the world, although the most numerous class, were the least organized for the defense and development of their own welfare. They were in most cases little organized nationally, and wholly unorganized internationally. Farmers sowed and reaped, bred and slaughtered, with small conception as to the needs of the market or the actual and potential supplies available to fill these needs. Hence it was obvious that the interests of agriculture required—must have—a central clearing house for information pertaining to the world's agricultural activities. This was the prime requisite, the pressing need that overshadowed all others. To this end, he proposed the creation of a world Chamber of Agriculture. This proposal actively sponsored by the King of Italy led to the founding of the International Institute of Agriculture in 1905.

David Lubin was the California merchant. He was the author of the idea. An understanding of the origin of the Institute requires an appreciation of the character of Lubin. He was an unusual and peculiar man. The Institute had an unusual and peculiar beginning. Most official international organizations come into being as the result of a definitely recognized and wide-felt need. Their desirability is an accepted thesis. The problem most often confronting the successful organizer of welfare agencies is that of bringing into being something already in demand. But such was not the case with the Institute. Neither the public nor government circles before 1905 were demanding nor interested in establishing a world clearing house for agricultural information. Neither officials nor individuals other than Lubin were considering the possibility of stabilizing the price of wheat through international action. Hence the task was not alone that of creating a machine to fulfill a long-felt need, but the nearly insurmountable one of creating an international demand sufficiently widespread and vigorous to withstand the inevitable shocks involved in building such an international structure. Few would have undertaken the work. Only the exceptional could have brought it to an acceptable conclusion.

The history of the Institute is in part the story of a private citizen inducing the nations of the world to materialize officially an idea in which they were little concerned, and which to most governments was of doubtful promise.

What manner of man was Lubin?

American tradition, as popularly conceived, demands that its

great be of humble origin. Upon this basis few hold a stronger claim to greatness than did Lubin. He was a descendant of the tribe of Israel. His race was unpopular in many countries of Europe. But Lubin had the misfortune to be introduced into the world in a country where race hatreds were permitted to rage uncontrolled. The lot of the Jew in eastern Europe was not a happy one during the middle of the nineteenth century. Politically oppressed, commercially restricted, socially shunned, and often subject to mob violence, life was confined to the ghetto. The government begrudged their presence and created conditions which did not permit the members of the race to enjoy more than a mere existence. This was the environment into which Lubin was received. He was born in 1849 in the village of Klodowa, near what is now Cracow, Poland. His father died during one of the prevalent cholera plagues while David was yet an infant. His mother remarried. After having survived the horrors of a pogrom, the family packed its meager belongings and emigrated to London. But life in this metropolis was difficult to the newcomers. The family's stay was short. In 1855 the family moved on to New York City and settled on the "lower east side." Lubin's formal education was limited to the elementary grades. He became self-supporting and a full-time wage-earner at twelve.

David's economic career started in 1862 as a polisher at a jeweler's bench in Massachusetts. The wages were \$3.60 per week. From jeweler's apprentice he applied himself to "whatever turned up" in California, and to prospecting for gold in Arizona. On returning to New York he stopped long enough in Chicago in 1871 to lose most of his few belongings in the great fire caused by the carelessness of Mrs. O'Leary's cow.

Surprisingly enough, he had saved a little money, for he was wandering through Holland, Germany, Austria, and Poland before he had reached the age of 25.

Not long after his return to the United States, he established himself as a merchant in Sacramento in a small room over a basement saloon. This was in 1874. On the same floor separated by a thin partition was a Chinese laundry. Times were difficult. For economy's sake, the embryonic merchant slept under the counter, and took his meals in a boarding-house on the floor above his store. During the first few months it was a struggle to pay the rent and meet the modest demands of the landlady of the boarding house. Such was the beginning of one of the largest department stores and mail order houses on the Pacific Coast. In addressing the employees of the store in 1916, Lubin char-

acterized the beginning as a start "with a goodly assortment of ethics, but with an indifferent stock of goods. . . . Unfortunately, the people who called to buy knew little or nothing of ethics."

Within twenty years the prosperity of the business was such as to enable the founder to devote the last twenty-five years of his active life to public undertakings of a welfare nature.

The story of Lubin's public conquests has few parallels in history. His major plan as finally developed called for cooperative action among nations. As a private individual without official connections, and wholly without government support in his own country, he set out to obtain assistance from the "chief executives" of the nations of Europe. Lubin was anything but a diplomat in the accepted sense of the term. Frankness was an outstanding characteristic. When he spoke it was in a booming voice. When he wrote a letter he might have appropriately addressed it "To Whom It May Concern," for he was in the habit of sending copies broadcast. He had no use for the whispered suggestion or the methods of secret diplomacy. Confidences were to be shunned. He gave and demanded plainly written and clearly spoken enunciations. In his letters he was continually beseeching the correspondent to "read this letter slowly"; "go over it again"; "read this twice." An excerpt from a letter to Congressman Kahn in 1911 is typical:

I have your letter of December 12, and would ask you first of all to take this letter home with you and lock yourself up in your room and give it a very careful reading, and then read it over again, when I think you will give yourself a "job"; a job that may not only be significant for the work in hand, but have significant results on your public career.

But whether addressing the chief executive of a nation or the man in the street, the tone and method of approach were the same. They possessed a tinge of exhortation. He spoke with the conviction of a preacher who harbored no doubts. Typical samples of his positiveness are contained in a letter to President Wilson:

Presidents come and go and it all seems like a row of electric arc lights overhead; the ones directly overhead look quite prominent, but those a distance off all seem to merge into a slender string of inane objectivity. I told Mr. Meyer, when Ambassador at Rome, that not the peace between Russia and Japan would make Roosevelt great, but that his then power towards the realization of a sound rural credit system, and the adaptation of the German Landwirtschaftsrat, would give him a place in the sun of American history, a place alongside of the ones that stay. But Mr. Meyer smiled a supercilious smile, and then went on to St. Petersburg to engineer the peace matter. What applies to Roosevelt applies to you.

Lubin had a tenacity of purpose such as is possessed by but

few people, and one that is seldom encountered in the form in which he displayed it. In an address at Coblenz, Germany, upon the occasion of the visit of an American Commission to the monument and house of Raiffeisen, Lubin aptly observes:

If you have come to hear eloquence or witness the subtle tricks of an actor or a speaker, you are quite likely to be disappointed. That gift was not given me. If any gift was given me it was the ability to hold on tight like a bulldog to a proposition that seemed to me logical and right and that moved me.

Since most of Lubin's undertakings required legislative enactments, he was dependent upon lawmakers for assistance. In soliciting this assistance he seldom failed to emphasize the glory which would come to those who espoused the cause. To one Congressman he wrote:

You have a hard fight, that is true, but not so hard so far as law, so far as logic, are concerned. It seems to me a one-sided case; rhetorication on the one side and statesmanship on the other. Which of these should win? The man that has it in him, if he does not win your side, does not deserve to win; his place is the woodpile.

But whatever may have been the peculiarities of Lubin, and one may grant that he possessed them in goodly number, they were offset and more than counterbalanced by exceptional virtues. His disarming frankness and evident sincerity and honesty of purpose went a long way toward overcoming opposition. His freedom from desire of material gain is illustrated by the fact that he served for many years as the representative of the United States Government at the Institute without pay.

In discussing the Institute appropriation in 1909, a misguided and uninformed member of Congress called the Institute a "fake" and a "private snap" for the American representative. At that time the salary for the American representative was \$3,500 per year. The criticism implied that this generous sum went to enrich Lubin, whose only interest in the Institute was an attachment to the payroll of his Government. However, inquiry would have shown the member of Congress that Lubin had drawn but \$100 of his salary. Of this amount one of the officials of the State Department expended \$80.00 for engravings of Washington and Lincoln, which adorn the American room at the Institute. The \$20.00 balance was returned to the Treasury of the United States.

Lubin never drew a cent for salary or expenses (except the above mentioned \$80.00) from the Government during his fifteen years in Rome as the official representative of this government.

He even returned to what must have been astonished editors,

checks for solicited contributions to their journals. To the editor of the *Atlantic Monthly* he writes:

I have yours of July 15 enclosing cheque No. 14865 on the First National Bank of Boston for 720 lire as payment for my article on the "Distribution of Farm Products." I return this cheque with thanks, as it is contrary to my custom to accept payment for what I write. Please acknowledge receipt.

Some say Lubin was a genius. Others say he was a fool. None dispute that he was eccentric. All agree that he had a tenacity of purpose such as is exercised by few people. His enthusiasm for his idea approached religious fervor. Rebuff, refusal, or defeat made no impression on him. Tenacity, enthusiasm, and sincerity gave force to his undertakings. These characteristics, together with an entire lack of personal ambition, went a long way in enabling him to succeed in his efforts to establish an International Institute of Agriculture.

Present-day interest in the export debenture plan for farm relief suggests that we return for a moment to the further consideration of Lubin's export bounty proposal. His inquiring mind caused him to raise the embarrassing question as to whether or not the staples of agriculture in the United States were really protected by the tariff system. In 1893, he wrote an article for the *Sacramento Bee* in which he developed the thesis that as long as the United States was an exporter of agricultural staples, the producers of those staples could not be protected by a tariff on imports.

Since these same producers were compelled to buy protected manufactured commodities and pay the protected wage rates of a national market, at the same time selling their own products on an unprotected world market, Lubin advocated "equality" of protection for agriculture or the abolition of protection for industry. In 1896 he wrote to Mark Hanna:

I believe that protection, when limited to a tariff on imports, becomes, under present conditions, an enormous burden and a tyrannically unjust tax on agriculture; a burden which should be equalised or abolished.

As may be imagined, these ideas were not cordially received by the old line protectionist who controlled the policies of government. To suggest that protection be abolished was an unforgivable sin, and the bounty system was not considered in a happy light at that time.

The Secretary of the American Protective League was asked to reply to the following three questions:

(1) Does a tariff on imports protect the staples of agriculture as long as they are exported? (2) If not, do not the producers of the staples pay for protection

and sell at free trade prices? (3) Is this equitable? And if not, would it not be equitable to protect the staples by a bounty on exports as long as manufactures are protected by a tariff on imports?

Lubin offered to debate the issues with League representatives. If the decision was in their favor he promised to donate \$1,000 to the League to be used in carrying on its work. As an evidence of good faith he forwarded a certified check for the stipulated amount. The reply stated that the matter would be referred to the Executive Committee. Evidently the Executive Committee decided that the organization was not in need of the funds. The check was returned.

A similar offer, with the price raised to \$10,000, was made to President McKinley's campaign manager. In April, 1896, Lubin wrote to Mark Hanna:

I shall, on receipt of your telegram accepting same, deposit in the Bank of D. O. Mills & Company, the sum of ten thousand dollars subject to the terms and conditions offered to the American Protective Tariff League of New York (see paper enclosed), which, should the matter be decided against this proposition, shall be placed to the credit of the McKinley campaign fund. Should the decision be against McKinley, then in that event he (McKinley) is to advocate this proposition.

Not only did Lubin offer to meet all comers in public debate, and make it worth the opponents' while if they were victorious, but he left sums with the Department of Economics at the Universities of Wisconsin and Michigan to be distributed in prizes for student essays on "Protection and the Farmer."

Nothing came of the campaign challenge. A nervous breakdown, followed by physician's orders for a complete cessation of work and a change of environment, prevented Lubin from following the quarry.

In 1904, broken in health, with a bronchial ailment which affected the heart and made it impossible for him to walk more than a few steps without pausing for breath, Lubin was ordered by his physician to Egypt in search of relief. This order was translated into an opportunity to place his scheme for an International Chamber of Agriculture before the "chief executive" of some nation. Lubin was a private citizen without official connections. His plan for the relief of agriculture required the official backing of a nation which in turn could use its good offices in presenting the plan for adoption to all nations. The idea had already been presented to the Secretary of Agriculture of the United States, who was favorably disposed toward neither the concept nor its author. It is, perhaps, not surprising that one advocating the abolition of protectionism received a cold reception in official Washington in 1904. Furthermore, the Secretary

was extremely doubtful regarding the merits of the proposal. In his opinion, American agriculture was quite prepared to defend its own interests. Lubin went to England and France with a view to finding supporters. There is little to record of his activities in these two countries, except that he was not successful in reaching ears that belonged to persons who were both sympathetic and influential. Rome was next on the list with Vienna, Budapest, and Berlin to follow, providing failure continued to hover over his efforts. His search for a sponsor ended in Rome. Twenty days after his arrival in Italy he secured an audience with the King, which audience resulted in the calling of an international conference in June, 1905. This conference formulated an international treaty establishing the Institute.

Perhaps no event in Lubin's life so well illustrates his dominant characteristics—singleness of purpose, faith in the worthiness of his project, and a tenacity that refused to recognize defeat—as does his campaign for the privilege of presenting his plans to the King of Italy.

He arrived in Rome on October 4, possessing no credentials other than a large, black scrapbook. This volume contained clippings of news items about himself and his work, and letters of introduction "to whom it may concern." These credentials with their patent medicine flavor were served up to any and all who might be interested in his past history, present activities, or future ambitions.

With the aid of an interpreter he set out to conquer official Italy. Lubin knew no foreign languages. In fact, he spoke only early Californian. His was the phraseology of the western pioneer. His sorties into foreign tongues may be summed up by an oft-repeated request to Rome cabmen for a "matcherino." The demand generally produced results, for it was always accompanied by an imitative striking-a-match gesture rendered by a full-arm swing from the hip pocket—a familiar practice before the days of safety matches and when smoking was largely confined to the masculine element of humanity.

The net result of these early efforts in Rome was that of being passed from one official to another in the process of being rid of a crank.

The King was at the time staying at one of his summer homes in the north of Italy. Lubin's own desire was to go there, knock on the door, and demand an audience. But counsel from all sides convinced him of the futility of such action. By chance he became acquainted with a sporting editor of one of the Rome papers

who had met the aide-de-camp of the King at the Naples races. On the basis of this slight acquaintanceship it was planned that Lubin and the sporting editor should go to the King's temporary residence near Pisa, get in touch with the aide-de-camp, and recall the Naples acquaintanceship. Perhaps this official would be disposed to arrange an appointment. But before putting this plan into action, Lubin decided to continue working upon officialdom in Rome. His next call was upon the Minister of Agriculture. The Minister had neither the time nor the patience to listen to a story of the ills of humanity. Furthermore, he was not willing to consume time by listening to an American interpretation of the fables of Ancient Rome. He interrupted with a "what does he want?" directed at the interpreter. Lubin emphatically replied that he wanted nothing, but that he was there to give his (the Minister's) King the opportunity of doing a work of great historic importance. "Tell him that!" Lubin commanded of the interpreter. That was the end of the interview with the Minister of Agriculture. Little did the Minister suspect that eight months later he would be making the inaugural address at an international conference called to consider the proposal of this eccentric citizen of the United States.

During the course of his wanderings in Rome, Lubin met Professor Montemartini of the Bureau of Labor. In this individual, the "crazy American" found a sympathetic listener. Montemartini was a protege of Luzzatti, Minister of the Treasury. Lubin was advised to see the Minister of the Treasury. The elections were near, and the Minister was absent from Rome campaigning when Lubin called at his office. The matter was laid before his secretary, who objected that it was impossible for the Minister to give attention to outside matters until after the elections. The reply to that remark is characteristically Lubinistic:

In a month's time, if Italy has not decided to take the initiative in this matter I shall have taken it elsewhere. I have been in London, I have been in Paris, I am in Rome for a few days; if I do not succeed here, I shall go to Vienna or Budapest. As for your elections, they are a small matter of purely local importance when compared to the world importance of the proposition which I wish to place before your Minister. I bring him the opportunity to do a piece of work of lasting historical importance; he is not the man to turn it down without a hearing. Your elections will all be forgotten in a few months, while this is a work which will live and grow. Tell your Minister that if he wishes to become truly famous, he should have his country take the proposed initiative. If I do not hear from him within the next few days I shall carry the proposal elsewhere.

The secretary promised to do the best he could. Luzzatti was a statesman of broad vision and had a deep interest in the wel-

fare of agriculture. He was the founder of the existing system of cooperative agricultural credits in Italy. In spite of the pressing importance of elections, Luzzatti found time to read the papers Lubin left. He not only read, but believed. He gave Lubin the coveted letter which served as a passport for an audience with the King.

Guglielmo Ferrero in 1905 observed:

Mr. Luzzatti is a very curious mentality, half Latin, half Semetic, very sensitive to the charm of beautiful classic rhetoric, and in whom politics has not entirely smothered a decided leaning towards mystic ideas. This American, whose neat phraseology, biblical imagery, and decisive gestures affirmed that he had brought him a universal idea, worthy of the grandeur of Rome, made a deep impression on him, and if he was not entirely convinced of the worth of the project, he was persuaded to present Lubin to the King, who was then at San Rossore, near Pisa.

One may rest assured that Lubin lost no time in going to Pisa. Upon arriving, he took the first cab and drove out to San Rossore where the hunting lodge was located. There he was informed that the King was out shooting with his aide-de-camp. Nothing daunted, Lubin handed in Luzzatti's letter, accompanied by the inevitable scrapbook, with the casual remark that he would return in a couple of hours for an answer. He returned not only once, but three times that day, to be met by the assertion that the King was out. Upon his return the next morning, to his utter amazement and consternation the letter and the scrapbook were returned to him. Closer examination of the letter explained the reason. He had by mistake presented, not Luzzatti's letter, but a paper pertaining to private family matters. After this episode his secretary finally persuaded him that if he continued to drive back and forth between Pisa and San Rossore he would be arrested for an anarchist, and that the thing to do was to return to his hotel, send the proper credentials by post, and await a reply. This advice he reluctantly accepted. Waiting was a difficult task for Lubin. He spent a restless day. It was impossible to remain inactive, so he imparted his troubles to the hotel proprietor and the mayor of Pisa. At nine o'clock in the evening he received word that the King would receive him next morning (Sunday) at nine. The day of the rendezvous presented another dilemma. The sporting editor had impressed upon him the necessity for correct attire in calling upon royalty. Among other things, he must wear without fail a high hat and gloves of a certain shade. But Lubin's sense of economy told him there was plenty of time to secure such "traps" after he had been granted an appointment. As contrary winds would have it, the notice of

the appointment for Sunday morning came Saturday night after all the stores were closed. So it was with his broad-rimmed Sacramento hat and no gloves that he set out. He started at 7:30, although the appointment was at nine, and San Rossore only a half-hour's drive from Pisa.

As far as I am aware, no complete or authentic record of the interview exists. This lack of definite information creates a fertile field for rumor. Hence, there are many amusing stories of the conversation. A typical one, undoubtedly without foundation except that it illustrates Lubin's method of approach, has him opening his audience with the following remark: "Now, Mr. King, you probably realize that although you are the King of an important country, it is not a first-rate nation. There are England, Germany, Austria-Hungary, France, and of course, the United States, which rank ahead of your nation. But I have a plan which, if carried into effect by you, will make you a first-rate king of a first-rate country."

It is safe to assume that the matter was not put in that form. Yet David Lubin had a reputation for expressing his opinions unadorned. It is reasonable to believe that he did state that he had a plan which, if put into effect, would place Italy among the foremost nations of the world. Lubin left with the King a brief of his proposal. This brief closed with the statement:

The merit of a Chief Executive is judged by the lasting historical events influenced by him and the quality of those events.

and indicated that an initiative resulting in the creation of an International Chamber of Agriculture "would lead to lasting historic renown."

The King promised Lubin that he would refer the matter to his ministers, and if they thought well of it he would take the initiative in calling an international conference to consider the proposal. The conference establishing the International Institute of Agriculture was held in Rome in June, 1905.

Again faith had moved a mountain. Within twenty days after arriving in Rome, a private citizen, practically unknown, with a scrapbook as his credentials, had secured an audience with the King, solicited his support for an international undertaking, and had received a hopeful reply.

The question is often asked as to why the Institute is located in Rome. The answer is simple. An American peddled an idea. The King of Italy was the first bidder.

POTENTIAL SUPPLY AREAS OF PACIFIC COAST MARKETS FOR HOGS

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With the rapid growth of population on the Pacific Coast, the demand for live hogs to supply the fresh meat trade of the coast cities has been increasing. The local production of California, Oregon, and Washington is not sufficient to supply this demand. Because of the relatively prosperous condition prevailing in these cities over the period covered by this study a very good quality hog was required to satisfy this demand, the weight preferably not exceeding 200 pounds. The price situation was such that live hogs could move at a profit from states in the corn belt of the Middle West to the coast cities, especially at certain seasons of the year. The problem here dealt with is that of locating the points or zones of indifference at which, under competitive conditions, net returns to shippers would be the same whether they shipped to west coast markets or to markets in the corn belt or in the East. Stating the problem in another way, the purpose was to measure the potential reach of the west coast markets toward the East in competition with corn belt and eastern markets for live hogs. It was thought desirable, also, to bring this potential situation into relation with what was known about the actual origin of hogs entering these markets. Portland and Los Angeles are taken as representative of Pacific Coast markets, while St. Paul, Sioux City, Omaha, Kansas City, and Fort Worth are representative of corn belt markets. Pittsburgh is used to illustrate the potential competition which exists between west coast and eastern markets.

The Potential Supply Area for Hogs for Portland as Against Sioux City and St. Paul

The location of the breaking points in competition for live hogs between Portland, Oregon, on the one hand and Sioux City, Iowa, and St. Paul, Minnesota, on the other is based on the differentials in hog prices existing between Portland and Sioux City and Portland and St. Paul over the period 1924-29. The prices used were for medium to choice hogs, 200 to 250 pounds, as furnished by the Bureau of Agricultural Economics.¹

Hog prices at Portland exceeded those at Sioux City in every

¹ Prices were lacking at the Sioux City market from January through June in 1928. Therefore, the price differentials for Portland as against Sioux City cover only five and one-half years.

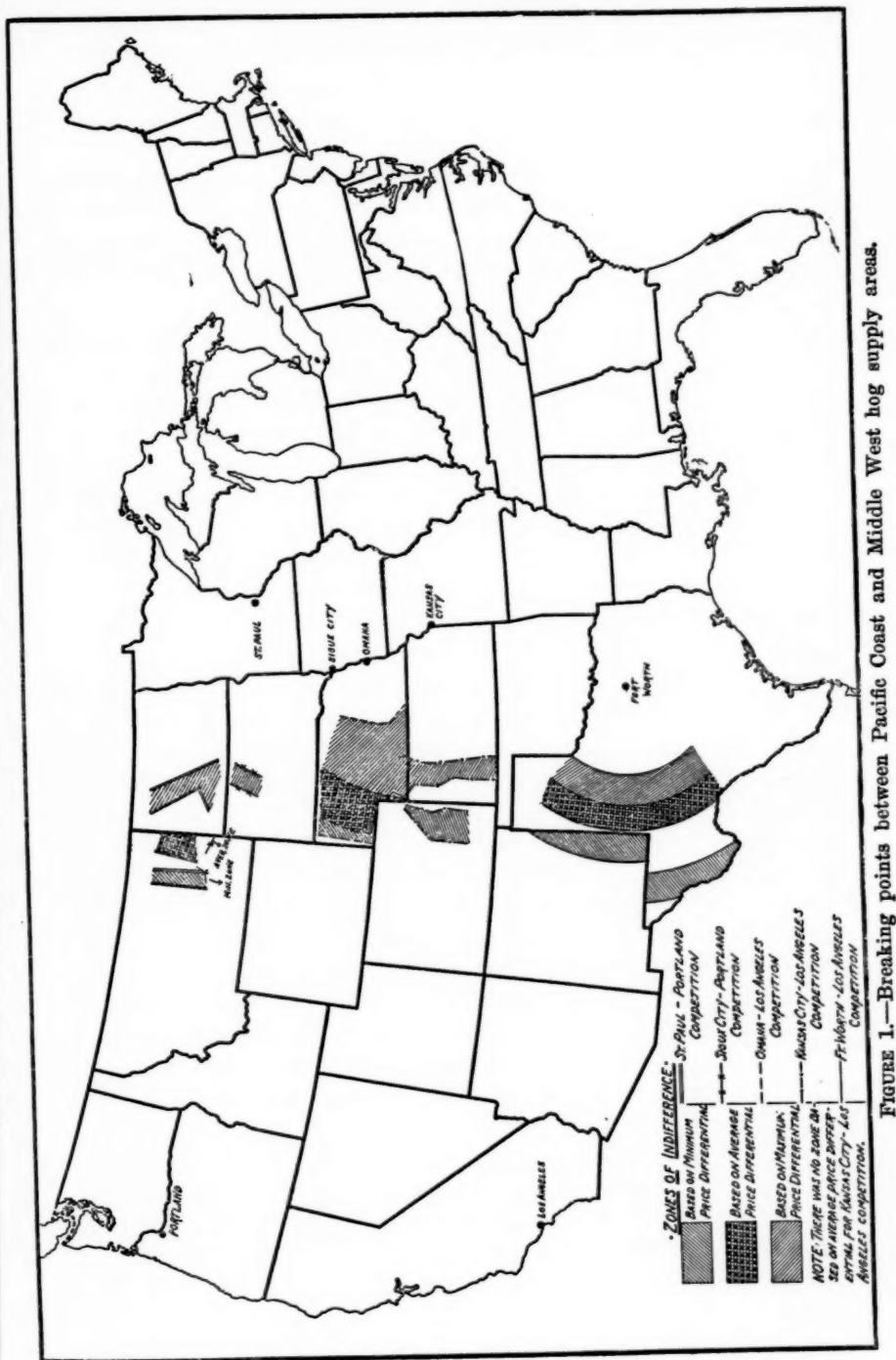


FIGURE 1.—Breaking points between Pacific Coast and Middle West hog supply areas.

year of the period covered in this study. The average annual differences in cents per 100 pounds prevailing were as follows:

1924 66¢	1925 81¢	1926 115¢	1927 96¢	1928 ² 29¢	1929 80¢	Average 80¢
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After the seasonal price differentials were averaged, the maximum, average, and minimum seasonal price differentials were calculated; these were \$1.14, \$0.80 and \$0.63, respectively. Portland's price advantage over Sioux City was greatest in the months of May, June, July, and August.

These differentials were used in establishing the points of indifference which divided the potential supply area of one market from that of the other. The chief marketing cost is freight, and since freight is paid to overcome distance, the distance from which a market with a price advantage can draw in competition with a market over which it enjoys such advantage will be represented by the amount of freight cost which the favorable price differential will pay under existing freight tariff conditions. Accordingly, the favorable price differential of Portland was converted into freight cost at rates prevailing in the tariffs of the different railroads serving the area of supply common to the two competing markets. Points were located on these railroads intermediate to the two markets. A line joining these points gave a first approximation to a division of territory between the two markets on a basis of differential costs and prices.

It is evident, however, that the difference in distance from any one of these points to the two markets would be reflected in differences in shrinkage cost, and that these shrinkage costs would vary seasonally in amount and value. The differential shrinkage cost of the two markets was determined and converted into freight cost. The point originally located in terms of differential price and terminal costs was relocated nearer the market of higher price. Points thus located were taken as points of indifference from which net returns to shippers of livestock were equal to both markets, prices and costs of reaching the market considered. A line drawn to connect such points located on the different railroad lines traversing the supply area resulted in a division of territory that gave to the market with the favorable net price difference the larger supply area. The potential area of each market extended up to this line.³

² Based on prices from July through December.

³ For full details of this method see: E. A. Duddy, "The Potential Supply Area of the

The use of the minimum and average price differentials established breaking-points in eastern Montana. Use of the maximum differential established a line of indifference in western South Dakota. (See Fig. 1.)

Five states and Canada supplied the bulk of the hogs actually received at the Portland market over the period 1924-29. Idaho supplied 36.82 per cent of the total; Montana, 4.63 per cent; South Dakota, 8.58 per cent; Oregon, 40.84 per cent; Washington, 5.68 per cent; and Canada, 1.21 per cent. California, Colorado, Nebraska, Utah, Wyoming, North Dakota, and unclassified middle west states supplied the remainder of the hogs received. Approximately 275,000 hogs were received annually at Portland on the basis of 1924-29 data. If we assume that all the hogs from South Dakota came from points west of the line of indifference, then probably not over 1 per cent of average hog receipts at Portland came from areas outside that market's potential zone of supply.

Five states, Iowa (with 37.68 per cent of the total), Minnesota (with 6.13), Nebraska (with 23.25), North Dakota (with .43), and South Dakota (with 32.36) supplied Sioux City with the bulk of the hogs handled at that market. Minor supplies originated in Colorado, Idaho, Montana, New Mexico, and Wyoming. Approximately 2,855,000 head of hogs were received annually at Sioux City on the basis of an average of the data for 1924 to 1929. If it be assumed that all of the South Dakota supply came from that part of the state lying east of the line of indifference, then less than 1 per cent of the total average receipts came from outside the potential supply area of the market so far as west coast competition was concerned.

Comparing actual origins of hogs received at both Portland and Sioux City, it will be seen that Portland competes with Sioux City, in the main, for hogs from South Dakota. South Dakota supplied about 23,500 hogs to Portland while it sent 924,000 to Sioux City. In so far, therefore, as the line of potential advantage restricts Portland, on the basis of the six year average price differential, from entering into South Dakota's area of intensive hog production, it approximates somewhat the actual situation.

Chicago Livestock Market," JOURNAL OF FARM ECONOMICS, Vol. XIII, No. 3, July, 1931, pp. 410-425.

No accurate measures of shrinkage are available; the mileage basis for assessing shrinkage charges as used in this study rests upon a composite of opinions: The following gives a fairly good idea of the way the shrinkage table progresses on a 200-250 pound hog:

From 0 to 99.9 miles.....	1 lb.
100 to 249.9 miles.....	1½ lbs.
250 to 349.9 miles.....	1¾ lbs.
350 to 499.9 miles.....	2 lbs.
500 to 649.9 miles.....	2¼ lbs.

Hog prices at Portland also exceeded those quoted at St. Paul for the same grade of hog. The average annual amount by which Portland's price exceeded St. Paul's in cents per 100 pounds follows:

1924	1925	1926	1927	1928	1929	Average
64¢	91¢	98¢	92¢	32¢	66¢	74¢

The differentials in cents per 100 pounds used in computing the breaking-points were as follows: maximum seasonal differential, 112; average seasonal differential, 74; minimum seasonal differential, 61. Portland's price advantage over St. Paul was greatest in the months of February, June, July, and August.

On the basis of such differentials, territory was divided between the two markets as follows. The minimum differential established points in east-central Montana, the average differential established points on the eastern boundary of Montana, and the maximum differential established points in western North Dakota. (See Fig. 1.)

No data were available on the state origin of hogs received at the St. Paul market. On the basis of all the data available for other surrounding markets, however, it would seem that the majority of that market's supplies originate in the states of Iowa, Minnesota, North Dakota, and South Dakota. If this is so, then comparison of the actual supply area for hogs received at St. Paul with that for Portland as indicated above would show that there is a breaking-point between the states of North Dakota and Montana. This corresponds very closely, therefore, with the potential line established on the basis of the average price differential which follows the eastern boundary of the state of Montana.

If it be assumed that the six year average seasonal price differential is the most representative figure to use in determining the breaking-points, there results a composite line running through the eastern boundary of Montana into the northwest corner of South Dakota which divides the territory supplying the Portland, Sioux City, and St. Paul markets. On the basis of that line, Iowa, South Dakota, North Dakota, and Minnesota territory are given to the Sioux City and St. Paul markets, while Idaho, Montana, Wyoming, Oregon, and Washington constitute the territory of the Portland market. The seasonal variation in the differential does not appreciably alter this allocation of territory.⁴

⁴ It should be noted that the rate set-up provides rates in cents per hundred pounds to St. Paul and Sioux City from points in the Dakotas and Montana. On the other hand, the rates to Portland are quoted in terms of dollars per car. The rates to Portland tend to vary

Breaking-Points in the Potential Competition between Los Angeles and Omaha, Kansas City, and Fort Worth.

Los Angeles-Omaha Competition

Hog prices at Los Angeles exceeded the quotations at Omaha in every month during the years 1923 to 1929, inclusive. The yearly differences in price per 100 pounds during the period were:

1923	1924	1925	1926	1927	1928	1929	Average
\$1.32	\$1.50	\$1.69	\$1.86	\$1.62	\$1.23	\$1.39	\$1.51

When the seasonal price differentials were averaged over the period, maximum, average, and minimum seasonal price differentials were found as follows: maximum, \$1.69; average, \$1.51; minimum, \$1.38.

With price advantages as large as these, Los Angeles, on a potential basis, can enter into Nebraska territory. Offsetting the minimum price differential against freight and shrinkage costs, breaking-points between Los Angeles and Omaha appear in western Nebraska. Typical points are Hemingford, Nonpareil, Marsland, Belmont, Rutland, etc., on the Burlington; McGrew, Melbeta, Brockhoff, Haig, and Bushnell on the Union Pacific; and Bordeaux, Chadron, Wayside, Whitney, Crawford, and Ft. Robinson on the Chicago and Northwestern. (See Fig. 1.)

Use of the average price differential in favor of Los Angeles carries that market toward central Nebraska. Typical points in this breaking-point area are Cody, Eli, Merriman, Irwin, Gordon, Rushville, etc., on the Chicago and Northwestern; Hyannis, Ashby, Ellsworth, Lakeside, Antioch, Alliance, etc., on the Burlington; and Martin, Le Moyne, Belmar, Ruthton, Oshkosh, Lytle, Kuhn, Finley, Kelley, etc., on the Union Pacific.

The size of the maximum price differential locates the breaking-points between the two markets in east-central Nebraska. Points were located on the Burlington at St. Michael, Hazard,

more with distance than do the rates to Sioux City and St. Paul. There is one exception to this foregoing statement. The Northern Pacific Railway publishes rates from stations in Minnesota and North Dakota to Portland as follows:

Hogs in single deck cars, 36 ft. 6 in. or less in length, from all these stations.....	\$1.97 per car
Hogs in double deck cars, min. C.L. weight in cars not over 36 ft. 6 in. length, 25,000 lbs. Cars over that length 1,000 lbs. additional for each foot or fraction thereof in excess of the 36 ft. 6 in. The charge for shipments in such cars will be.....	\$1.14 per 100 lbs.

An example of the way the Sioux City and St. Paul rates were blanketed may be given in these rates quoted from the Northern Pacific tariff 787-F, effective May 15, 1928:

From stations, index nos. 1 to 40 (in Montana) to Sioux City....	\$0.66 per 100 lbs.
From stations, index nos. 41 to 48.....	\$0.67 per 100 lbs.
From stations, index nos. 49 to 56.....	\$0.69 per 100 lbs.

Similar examples might be quoted for hog rates from points in North and South Dakota to these two markets.

Litchfield, Mason, Ansley, Berwyn, Broken Bow, Ernst, Anselmo, etc. Typical points on the Chicago and Northwestern were Ewing, Inman, O'Neill, Emmet, Newport, Ainsworth, Johnstown, etc. On the Union Pacific were located Denman, Hayland, Newmarch, Buda, Kearney, Riverdale, Amherst, Watertown, Miller, Eddyville, Lodi, Alfalfa, Odessa, etc.

The bulk of the 217,283 hogs received at Los Angeles on the average every year (basis of 1923-29 data) originated in ten states. California supplied 14.36 per cent of the total, while 18.46 came from Colorado, 13.07 from Idaho, 2.21 from Kansas, 21.52 from Nebraska, 2.86 from New Mexico, 4.50 from Oklahoma, 8.10 from Texas, 10.96 from Utah, and 1.90 from Wyoming. Minor supplies were shipped from the states of Arizona, Iowa, Missouri, Montana, Nevada, Oregon, South Dakota, Washington, Louisiana, Minnesota, and North Dakota.

The bulk of Omaha's hog supply centered in the four states of Iowa, Nebraska, South Dakota, and Wyoming. These states supplied 19.06, 75.40, 4.77, and .47 per cent, respectively, of the approximate 3,229,000 head of hogs received annually (1923-29 average) at the market. Minor supplies originated in the states of Colorado, Kansas, Minnesota, Missouri, Montana, New Mexico, North Dakota, Oklahoma, Texas, Utah, and Washington.

Comparing the boundaries of the supply areas of these two markets for hogs, it is found that they cross in the state of Nebraska. No data were available to indicate the county source of hogs received from each state. It is not known, therefore, from what part of Nebraska Los Angeles received hogs and from which sections hogs went to Omaha. In so far as the data show anything, however, it would seem that the breaking-points determined on a theoretical basis approximate roughly the division of territory between the two markets. At any rate it is in the state of Nebraska that the competition of the two markets seems to be most severe.

From June until November, prices at Los Angeles compared with Omaha are much above a shipping difference between the markets with resulting increase in receipts at Los Angeles of Nebraska hogs relative to receipts at Omaha.

Los Angeles-Kansas City Competition

Los Angeles hog prices exceeded those of Kansas City, also, over the period 1923 to 1929. The most usual amount of their difference was around \$1.36. The annual differences in prices

per 100 pounds between the markets in favor of Los Angeles were:

1923	1924	1925	1926	1927	1928	1929	Average
\$1.20	\$1.08	\$1.50	\$1.64	\$1.51	\$1.16	\$1.25	\$1.36

The averaging of the monthly price differentials over the whole period resulted in the following maximum, average, and minimum price differentials: maximum differential, \$1.52; average differential, \$1.36; minimum differential, \$1.24. The advantage of Los Angeles over Kansas City is greatest in April, June, August, October, and November.

The offsetting of the minimum price differential against the freight and shrinkage costs resulted in the location of breaking-points in eastern Colorado along the Colorado-Nebraska boundary line on the Santa Fe, Burlington, Rock Island, and Union Pacific railroads. Typical points were Amity, Barton, Granada, Grote, Morse, La Junta, etc., on the Santa Fe; Wrag, Laird, etc., on the Burlington; Bethune, Stratton, Seibert, Genoa, etc., on the Rock Island; and Cheyenne Wells, Salis, Ascalon, Sorrento, Hogo, etc., on the Union Pacific. (See Fig. 1.)

The rates used to determine the breaking-points between Los Angeles and Kansas City prevented the location of such points with the use of the average price differential. Rates from western Kansas to Los Angeles were \$197 per car, as was the rate from points in western Nebraska. The rate from eastern Colorado to the same market was \$178 per car. These rates coupled with the progression of the rates from the same points to Kansas City created a situation where no zone of indifference could be computed with the use of the average differential. Instead, a gap was created between the zone based on the minimum and the zone based on the maximum differential. (See Fig. 1.)

By the use of the maximum differential Los Angeles was allowed to come into western Kansas and Nebraska. Santa Fe points located in Kansas were: Beeler, Alamota, Tractor, Alfalfa, Holcomb, Howell, Cimmaron, Sublette, Satanta, etc. Haigler, Sanborn, Max, Stratton, Trenton, Hamlet, Meeker, Beverly, etc., were points located on the Burlington in Nebraska. Traer, Herndon, Ludell, Atwood, Blakesman, Beardsley, etc., were on the same railroad in Kansas. Rock Island points in Kansas were Jennings, Dresden, Rexford, Colby, Levant, Mineola, Fowler, etc. Buffalo Park, Grainfield, Grinnell, Campus, Oakley, Winona, Page City, etc., were located on the Union Pacific in Kansas.

The actual hog supply area for Los Angeles has been indicated

above in the discussion of Los Angeles-Omaha competition. As against this area, the hogs received at Kansas City arrived mainly from the seven states of Arkansas, Iowa, Kansas, Missouri, Nebraska, Oklahoma, and South Dakota. Out of the 2,487,000 head of hogs received at Kansas City on an average each year from 1923 to 1929, Arkansas supplied .96 per cent, Iowa 1.93, Kansas 44.01, Missouri 29.46, Nebraska 15.27, Oklahoma 5.27, and South Dakota 2.02. Fifteen states sent minor shipments; these were Alabama, Arizona, California, Colorado, Illinois, Louisiana, Michigan, Minnesota, New Mexico, North Dakota, Oregon, Texas, Virginia, West Virginia, and Wyoming. From the actual supply areas of both markets it appears that the competition for hogs centered in the state of Kansas. Therefore, the breaking-points in western Kansas and Nebraska, determined on a theoretical basis, do have some relation to the situation as it actually existed. So far as Nebraska is concerned the competition is really three-cornered, but the pull of Kansas City on the Nebraska supply steadily decreased over the period while that of Los Angeles increased. Kansas was a relatively unimportant source for Los Angeles hogs.

Los Angeles-Ft. Worth Competition

Fort Worth's hog prices tended to be less than those at Los Angeles by \$1.25 on the average over the period 1923 to 1929. The yearly price advantage of Los Angeles amounted to \$1.00 per 100 pounds in 1923, \$1.05 in 1924, \$1.38 in 1925, \$1.11 in 1926, \$1.50 in 1927, \$1.20 in 1928 and \$1.46 in 1929. Averaging of the monthly price differentials gave maximum, minimum, and average seasonal differences as follows: maximum differential, \$1.36; average differential, \$1.25; minimum differential, \$1.08. Los Angeles price advantage over Ft. Worth is above average in March, April, June, August, September, October, and November.

The determination of the zones or breaking-points in this case involved a somewhat simpler method. As in the case of Los Angeles-Omaha and Los Angeles-Kansas City competition, the rates to Los Angeles were quoted in dollars per car. In this case, the rates from New Mexico points to the California market were blanketed at \$178 per car. Rates from Texas points to the same market were blanketed according to three districts. From the eastern belt hogs moved on a \$213 per car rate, while from the central section the rate was \$197. A few scattered points in the western part of the state took the same rate as the New Mexico

points (\$178 per car). The rate structure to Ft. Worth, however, was based on a mileage block system.⁵

The result was a "postage stamp" rate structure opposing a mileage system. Breaking-points determined from the interplay of these rates on the price differentials and shrinkage figures, therefore, represent mileage zones drawn from Ft. Worth as the center. The zone based on the minimum price differential was 320 to 380 miles away from Ft. Worth in New Mexico territory and 440 to 540 miles from Ft. Worth in southwestern Texas territory. Breaking-points figured from the average price differential were contained in an area 260 to 320 miles from Ft. Worth. Use of the maximum differential brought Los Angeles into Texas territory 200 to 260 miles west of Ft. Worth. (See Fig. 1.)

Kansas, Missouri, Nebraska, Oklahoma, and Texas actually supplied the great majority of the 368,393 head of hogs received at Ft. Worth annually on the basis of an average of the 1923 to 1929 receipts. Kansas supplied 3.10 per cent of that total, while 8.89 per cent came from Missouri, 4.50 from Nebraska, 26.97 from Oklahoma, and 52.70 from Texas. Competition between Los Angeles and Ft. Worth, therefore, centered around the hogs coming from Oklahoma and Texas.⁶ It is impossible to say, because of the peculiarities of the rate structure, whether the breaking-points as located give Los Angeles too great a part of the Texas territory.

A glance at Figure 1 shows that a fairly continuous line separates Los Angeles territory from that of Ft. Worth, Kansas City, and Omaha on the basis of the breaking-points as developed. Using the territorial zones based on the average difference in price between Los Angeles and Omaha and Los Angeles-Ft. Worth, together with the zone based on the minimum price differential existing between Kansas City and Los Angeles (there was no zone computed from the average differential in this case), a belt was found which passes through western Nebraska, western Kansas, and into western and southwestern Texas. With the

⁵ Below is a sample of the intrastate mileage progression:

The first 10 miles.....	10¢
Next 10 miles @.....	1¢
Next 10 miles @.....	1¢
Next 10 miles @.....	1¢
Next 10 miles @.....	½¢
Next 10 miles @.....	1¢
Next 10 miles @.....	1½¢
Next 10 miles @.....	1¢
Next 10 miles @.....	1¢
Next 10 miles @.....	½¢
Next 10 miles @.....	1½¢
and so on	

⁶ Los Angeles received 4.50 per cent of its annual average supply of hogs from Oklahoma and 8.10 per cent from Texas.

exceptions and reservations indicated in the above discussion, the territory to the west of this belt was a potential supply area of hogs for Los Angeles, while the territory to the east supplied Omaha, Kansas City, and Ft. Worth.

*Breaking-Points in the Potential Competition of
Los Angeles and Pittsburgh*

Receipts data at the markets in question do not include shipments destined direct to packers located at these markets. From such evidence as is at hand, however, it appears that Pittsburgh received a great number of these "packer directs" from interior Iowa and Nebraska points while Los Angeles received "packer directs" from interior Nebraska points. In so far, therefore, as Los Angeles and Pittsburgh packers competed for Nebraska hogs, where would the potential breaking-point in their competition be located?

Pittsburgh's price and receipts data were available since 1927. When that market's hog prices were compared with those quoted at Los Angeles for the same weight and grade of animal, it was found that the price at the latter market usually exceeded the price at Pittsburgh, the maximum amount of such price differential reaching \$1.40 in one month. In eight months over the period 1927 through 1929, Pittsburgh's prices exceeded those at Los Angeles, the maximum differential in favor of Pittsburgh

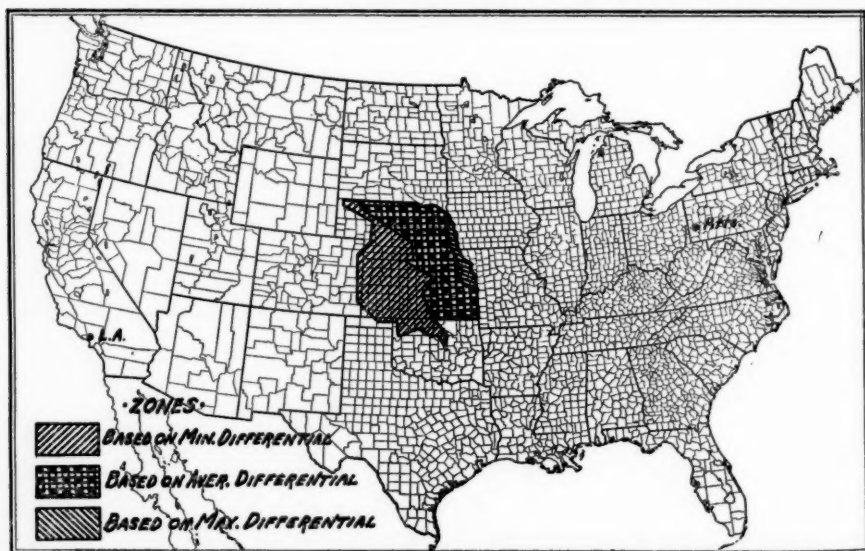


FIGURE 2.—Los Angeles-Pittsburgh competition for "packer directs" in middle-west hog-producing areas.

being \$0.37. Annual price differentials in favor of Los Angeles were: 1927, \$0.69; 1928, \$0.19; 1929, \$0.37; average 1927-29, \$0.42.

When the monthly price differentials were averaged, the following maximum, average, and minimum seasonal price differentials were obtained: maximum differential, \$0.75; average differential, \$0.42; minimum differential, \$0.26. The price advantage of Los Angeles over Pittsburgh is at a maximum in June, August, October, and November.⁷

The zones of indifference resulting from the use of these price differentials, balanced against shrinkage and freight costs, are shown in Figure 2. With the differential at a minimum the Los Angeles market can penetrate as far east as central Nebraska and Kansas. Under a maximum differential the potential area of Los Angeles is extended to the Missouri-Nebraska state line and extends slightly into southwestern Iowa. The checked pattern lying between the zones resulting from the minimum and maximum differentials in Figure 2 outlines the area of market potential under conditions of the average price differential.

The significant zones are those resulting from the maximum seasonal and average price differentials. As already pointed out, this maximum advantage of the Los Angeles market prevails during June, August, October, and November, when local supplies in California are at a minimum. In the maximum zone lie such important markets as Omaha and Kansas City. The zone of average price differential also taps an important hog producing area, while most of the territory included in the zone of minimum price advantage lies outside the area of intensive hog production.

Since hogs shipped as "packer directs" are not counted in Los Angeles and Pittsburgh market receipts, it follows, therefore, that a glance at the actual supply areas will not throw much light on whether or not the breaking-points of potential competition fit in with actual supply areas. It is known, however, from packers' statements, that hogs are shipped direct to their Atlantic Coast plants from interior Iowa and Nebraska points and to their Pacific Coast plants from interior Nebraska points. It can be assumed, then, that the breaking-points located in interior Nebraska must approximate roughly the state of actual competition. No data were available as to whether hogs were received at either point from interior Kansas. No statements can

⁷ Shrinkage costs charged against the respective markets were based on information supplied by Swift and Company. On the basis of this information, $7\frac{1}{2}$ to $8\frac{1}{2}$ pounds per 100 were charged against Los Angeles and from $6\frac{1}{2}$ to $7\frac{1}{2}$ pounds per 100 against Pittsburgh.

be made, therefore, about the accuracy of the breaking-points in Kansas territory in approximating the actual state of supply.

Over the period 1920-29 the following percentage reductions have taken place in swine production in Pacific Coast states: Washington, 19.2; Oregon, 4.1; California, 26.3.⁸ The intermountain states, however, with the exception of Arizona, New Mexico, and Utah, show relatively large percentage increases: Montana, 96.4; Idaho, 32.5; Wyoming, 106.9; Nevada, 7.4; and Colorado, 22.2. Utah remained almost stationary with a 1 per cent decrease.⁹

Thus it appears that production in the intermountain states has been adjusting itself to meet the increased demand of the coast states attributable to declining production and increased population. It is worth noting, however, that the Los Angeles market, where population has expanded most rapidly, depended to an increasing degree on hog supplies from California in spite of the decline of production in the state as a whole. From 1923 through 1929 hogs from California reported in the receipts at Los Angeles increased from 10.20 per cent of the total receipts in 1923 to 22.53 per cent in 1929. The intermountain states as a group contributed 38.64 per cent of market receipts at Los Angeles in 1923 and 47.4 per cent in 1929.

Texas and Oklahoma supplied 28.48 per cent of Los Angeles reported market receipts in 1923 but only 5.55 per cent came from these two states in 1929. Over this period there was drastic curtailment of swine production in these two states.

Nebraska and Kansas were the only two middle western states which contributed importantly to the Los Angeles market. In 1923 hog movement from these two states accounted for 22 per cent of market receipts. This percentage increased only to 23 in 1929, but was 32.05 per cent of the total in 1930 due to a reduction in total receipts reported at the Los Angeles market.

It seems conclusive from the study thus far that during the period studied the west coast markets were not able to penetrate the areas of intensive hog production of the Middle West in competition with Missouri River or eastern markets. Such supplies as moved west were mostly reshipments from other markets rather than from country points. To an increasing degree this movement seems to be on a direct-to-packer basis as is evidenced by the decline in total hog receipts reported at the Los Angeles stockyards since 1928.

⁸ "Regional Changes of Farm Animal Production in Relation to Land Utilization." 1929. U.S.D.A. mimeographed release.

⁹ *Op. cit.*

PROBABLE EFFECTS OF A DUTY ON PHILIPPINE SUGAR

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Agricultural interests in this country representing sugar and oil (vegetable and animal) are advocating that the United States grant the Philippine Islands their independence and then impose tariff duties on agricultural commodities which are now coming in from the Islands duty-free.¹ These interests are motivated by the belief that such tariffs would afford relief to the domestic producers of competing agricultural products. This article considers the question whether such a tariff will raise the price of sugar in the United States. The question of Philippine independence, as well as the controversial questions concerning our tariff policy, have been purposely avoided.

Less than one-fourth of the sugar consumed in the United States is produced on the continent. In the years 1917-22 the total continental production (cane and beet) averaged 23.4 per cent of consumption; the island possessions contributed 23.0 per cent; Cuba supplied 50.3 per cent; and other foreign countries 3.3 per cent. (See Table 1.) The percentage produced on the continent declined during the decade after the War, but regained its former position in 1931. Imports from the insular possessions have been increasing fairly rapidly, and in 1931 amounted to 38.6 per cent of domestic consumption. All of the islands have shared in this growth, but the Philippines have increased their exports to the United States the most rapidly of the group. Hawaii, Puerto Rico, and the Virgin Islands have about reached their maximum limits of expansion, but in the Philippines there still remain large tracts of land suitable for cane production which have yet to be brought under cultivation. Imports from Cuba during the period 1924-28 amounted to 54.1 per cent of consumption, but since have gradually decreased until in 1931 they represented only 37.2 per cent. Imports from Cuba have declined in absolute as well as in relative amounts. In the years 1924-28 the United States took 79.2 per cent of Cuba's exports, and in 1931, 76.5 per cent. Cuba, however, is still the largest single contributor to the United States' sugar supply, and is the largest exporter of sugar in the world. If the imports from the Philippines were entirely excluded by a tariff, Cuba would have ample sugar to fully satisfy our requirements.

¹ See House Resolution 7233, 72nd Congress, 1st Session.

How Sugar Prices in the United States Are Determined

Owing to the relative ease with which sugar can be stored or transported, prices in the various markets throughout the world are kept in fairly close alignment with due allowance of course for tariff and freight differences. Since Cuba is the largest producing and exporting nation and ships to several important markets of the world, the f.o.b. Havana price may be considered to be the basic or world price of sugar. The New York price tends to exceed the Havana price by the tariff and freight between the two points.

The Smoot-Hawley Tariff Act of 1930 imposed a rate of \$2.50 per hundred on full duty sugar.² But under the Cuban Reciprocity Treaty of 1903, Cuba is granted a 20 per cent preferential which makes the rate now prevailing on Cuban sugar \$2.00 per hundred pounds. Since Cuba stands prepared to supply all sugar required to supplement our continental and insular production, at the Havana price plus the freight and preferential duty, the rate of \$2.00 per hundred represents approximately the protection afforded the continental and insular sugar producers.

The burden of a tariff duty on a commodity is normally shifted in part backwards to the foreign producers and in part forwards to the domestic consumers. The distribution of the burden between producers and consumers depends upon the relation between the elasticity of supply on the one hand and the elasticity of demand on the other. In the case of our tariff on sugar, there is considerable evidence that it is largely shifted forwards to the consumer and that if the duty were entirely removed prices would ultimately be lower than otherwise by an amount approaching the duty.³

If the duty were entirely shifted to the consumer it could be roughly calculated that in 1931 the American public paid some 250 millions of dollars (actual treasury receipts collected on Cuban and other full-duty sugar plus a rate of \$2.00 per hundred applied to 1931 United States consumption other than Cuban and full-duty sugar) on account of the sugar tariff. Of this 250 mil-

² Paragraph 501 of the Act reads as follows: "Sugars, tank bottoms, sirups of cane juice, melada, concentrated melada, concrete and concentrated molasses, testing by the polariscope not above seventy-five sugar degrees, and all mixtures containing sugar and water, testing by the polariscope above fifty sugar degrees and not above seventy-five sugar degrees, 1.7125 cents per pound, and for each additional sugar degree shown by the polariscopic test, three hundred and seventy-five ten-thousandths of one per cent additional, and fractions of a degree in proportion." Note:—"Rates of duty under recent tariff acts (have) varied according to the degrees of sugar . . . the great bulk of the sugar imported from Cuba consists of raw centrifugal sugar the polariscopic test of which ranges from 92° to 97°. The selling basis is 96° with allowances up or down from the basic price according to the test." See *Summary of Tariff Information*, 1929, Vol. 1, pp. 968-970.

³ See, U. S. Tariff Commission, *The Relation of the Tariff on Sugar to the Rise in Price of February-April 1923*, 1923, also Philip G. Wright, *Sugar in Relation to the Tariff*, 1924, pp. 184-185.

lion, 98 millions were paid into the United States Treasury in the form of customs receipts, and the balance of 152 millions served as a subsidy to sugar producers behind the tariff wall. This was distributed in about the following manner: domestic beet, 50 million dollars; Louisiana and Florida cane, 8 million dollars; Hawaii, 36 millions; Puerto Rico, 28 millions, and the Philippines, 30 millions.

Probable Effects of a Tariff on Philippine Sugar

The effects of a United States tariff on Philippine sugar would depend much upon the rate imposed. It is difficult to conceive of our placing a larger rate on Philippine than on Cuban sugar. Certainly our obligations to the Philippines are equally as great as to the Cubans. For sake of illustration, assume a rate of \$2.00 per hundred, the same as Cuba pays. Under such a rate the two countries would be equally competitive on United States markets, so far as the tariff is concerned; Cuba would enjoy a small freight advantage (about 11 cents per hundred pounds to Atlantic ports) and about the following would probably happen:

1. Imports from the Philippines would be greatly reduced but probably not entirely eliminated.

2. On the basis of present sugar prices (July, 1932), production in the Philippines would probably be curtailed—not appreciably, however. Expansion of production would certainly be stopped. To determine the effects on production more specifically, information concerning the elasticity of Philippine production at these very low price levels would be required. Such information is not available. Unquestionably such action would be a temporary blow to the Philippine sugar industry; but now that capital has been invested and the industry thoroughly established, such action would cause serious readjustment rather than destruction of the industry. Though its growth might thus be set back or retarded, it would probably continue to contribute largely to the world sugar supply.

3. Earnings of Philippine producers, land owners, and laborers would be greatly reduced.

4. The reduction of imports from the Philippines would be largely offset by corresponding increases from Cuba. This would be accomplished in about the following manner: A larger part than at present of the Philippine sugar would move to Oriental markets. This would probably force more Javanese sugar on European and British markets, which could absorb it since Cuba would be sending less sugar to Europe and Great Britain and more to the United States to replace the Philippine imports ex-

cluded by the tariff. The total amount of sugar moving in international trade would be practically undisturbed, and there would probably be a net savings to the world in transportation costs.

5. Revenue flowing into the United States Treasury would be increased by approximately 30 million dollars annually. (Rate of \$2.00 per hundred applied to the equivalent of 1931 Philippine imports which would now be coming partly from Cuba.)

6. Prices in the United States would not be affected directly by such action, because they would still be determined by the Havana price plus freight and tariff, but Cuba, however, might possibly take measures that would raise the price of sugar by approximately 50 cents per hundred.

As long as Cuba produces more sugar than is needed in the United States to supplement the domestic cane and beet crop and that produced in the island possessions, it is necessary for her to look elsewhere for markets to absorb the balance of her crop. Unregulated competition among individual Cuban producers to sell their sugar on the protected United States market rather than on other more distant foreign markets has resulted in prices in bond to United States buyers at exactly the same basis as to buyers in other foreign markets after due allowances have been made for freight differences. Since 1911, when Cuba for the first time produced more sugar than was needed to supplement our supply from other sources, the full 100-per cent duty has never been price-effective.

If Cuba were to restrict shipments to the United States, however, she could force this country to pay approximately 50 cents per hundred more above the Havana price than at present, since prices would then have to rise by about that amount before other full-duty sugar could be made available. It would be to Cuba's interests to keep prices in the United States at a level which would just exclude other full-duty sugar. Because of her relatively short haul, it is possible that Cuba could raise the price by more than 50 cents per hundred; perhaps by 60 or 65 cents.

To effect the type of restriction here referred to would require a single sales agency having an export monopoly on all sugar sold to the United States. Such an organization would probably perform a brokerage service for Cuban producers. It would fix prices so as to make the tariff preferential price-effective and would distribute sales among the producers on some predetermined *pro rata* basis. The National Sugar Planters Association of Cuba has had such a plan under consideration for a number of years. Such control would be fundamentally different from the segregation of stocks under the terms of the Chad-

bourne Plan, and the more recent Cuban Presidential decrees of July 2, 1932. The Chadbourne Plan attempts to raise the general level of sugar prices by curtailment of production and by withholding accumulated sugar stocks from the markets, while the Cuban Presidential decrees of July 2, 1932, aim at increasing prices in the United States market only. The latter provide for the transfer of 115,000 tons of sugar from the United States quota (under the Chadbourne Plan) to outside United States quota and prohibiting an additional 700,000 tons of exports to the United States from this year's United States quota until January 1, 1933, unless the price reaches \$1.50 c.i.f. New York and remains there for five consecutive days. This is merely a holding operation which may or may not accomplish the objective desired. If the decree is strictly adhered to it is theoretically possible for full-duty sugar to enter the United States market at a price slightly below \$1.50 c.i.f. and thus leave Cuba in January, 1933, with the entire 700,000 tons on her hands.

The principal reason that Cuba has not exercised this power before now is that she has been fearful that by raising prices which in turn would stimulate the production of duty-free Philippine sugar she might defeat her purpose. During the past decade Cuba has been quite perturbed watching her exports to the United States dwindle and seeing their place taken by an ever-expanding sugar industry in the Philippines. An import duty on Philippine sugar would tend to remove this threat of increased production and would place Cuba in position to grant her sugar export monopoly power to raise prices in the United States. An increase in the price of sugar in the United States would probably be accompanied by a slight decrease in domestic consumption, and a slight increase in production in the continental United States. The effects of these reactions, however, would probably be small, and, if the Philippine threat were removed, Cuba would have far more to gain than to lose by taking such action.

A Limitation on Imports of Philippine Sugar

A less extreme group in Congress is advocating a resolution authorizing merely a limitation on the importation of Philippine sugar free of duty.⁴ This group realizes that the chances of getting Congress to impose a limitation of perhaps 500,000 or 600,000 tons on the duty-free imports of sugar from the Philippines are much greater than of getting a tariff on this sugar. So far as domestic sugar producers are concerned, a limitation would have just as much price influence as a tariff on Philippine

⁴ See House Joint Resolution 426, 72nd Congress, 1st Session.

imports. Cuba probably would act to make her preferential effective just as quickly if the threat of Philippine expansion were removed by a limitation on imports as though it were removed by a tariff.

A limitation would differ from a tariff in that it would not work such an immediate hardship on the Philippines; in fact, the Philippine people would have much to gain in the short run because they would share in the price increase brought about by the Cubans. Producers in all of the insular possessions, including the Philippines to the extent permitted free entry, in the continental United States, and in Cuba, would stand to gain by approximately 50 cents per hundred, largely at the expense of the American consumer.⁵ The treasury would receive but little additional revenue from the restriction as compared with the 30 millions which it would receive if a tariff were imposed on all of the imports from the Philippines.

It thus appears that producers of sugar in the continental United States would stand to gain but little by having Congress place a tariff on imports of Philippine sugar. Perhaps, however, such action would induce Cuba to make her preferential duty price-effective. It is possible that under the stress of the depression Cuba might be driven temporarily, as evidenced by the recent Presidential decrees, to use its already established export monopoly to raise prices irrespective of the influence of this on Philippine production. In that event a tariff on Philippine sugar would have a negligible effect on sugar prices in the United States but would represent welcomed protection for the Cubans.

TABLE 1.—SOURCES OF SUPPLIES OF SUGAR CONSUMED IN THE UNITED STATES

Source	1917-22	1924-28	1929	1930	1931	1917-22	1924-28	1929	1930	1931
	In Thousands of Short Tons.					In Per Cent of Total.				
Continental U. S.										
Beet.....	837	968	960	1066	1255	18.3	16.1	14.7	17.0	20.5
Cane.....	235	97	176	184	192	5.1	1.6	2.7	2.9	3.1
Total...	1072	1065	1136	1250	1447	23.4	17.7	17.4	19.9	23.6
Island Possessions										
Hawaii.....	536	680	868	753	904	11.7	11.3	13.2	12.0	14.7
Puerto Rico..	386	531	430	729	699	8.4	8.8	6.6	11.6	11.4
Philippines..	122	424	677	752	762	2.7	7.0	10.4	12.0	12.4
Total ^a ...	1051	1642	1980	2240	2367	23.0	27.3	30.4	35.7	38.6
Cuba.....	2304	3258	3376	2753	2280	50.3	54.1	51.9	43.9	37.2
Other Countries..	152	55	16	29	37	3.3	.9	.3	.5	.6
Grand Total.	4579	6020	6508	6272	6131	100.0	100.0	100.0	100.0	100.0

Source: *Concerning Sugar*, by U. S. Beet Sugar Association, and *Weekly Statistical Sugar Trade Journal*, Jan. 14, 1932. Data reduced to short tons.

^a Includes a small amount imported from the Virgin Islands.

⁵ If prices in the United States were increased by 50 cents per hundred, the sugar bill of the nation, on the basis of 1931 consumption, would be increased by about \$61,000,000, of which about \$14,000,000 would accrue to domestic cane and beet sugar producers.

THE FARM MORTGAGE SITUATION

WITH SPECIAL REFERENCE TO THE ELEVEN WESTERN STATES¹

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The Census—that muchly worked source of farm economic data—provides information as to the per cent of total number of farms reported as mortgaged. For the eleven western states of Washington, Oregon, California, Idaho, Nevada, Arizona, Montana, Wyoming, Utah, Colorado, and New Mexico, the totals for (1) number of farms operated by owners reported (a) free from mortgage, (b) mortgaged, for years 1920 and 1930; (2) the per cent of total farms reported as mortgaged for these same years, and (3) the total amount of mortgage indebtedness is as follows:

Free from mortgage—number of farms operated by owners:

1920	167,862
1930	167,154
Decrease of	608

Farms mortgaged—number of farms operated by owners:

1920	182,994
1930	191,834
Increase of	840

However, there was some change in total numbers of farms thus:

1920	382,659
1930	384,513
Increase of	1,954

Per cent of total farms reported as mortgaged, operated by owners:

1920	47.8
1930	47.6
Decrease of	0.2

¹ Paper No. 33. The Giannini Foundation of Agricultural Economics. This paper was read at the sixth annual meeting of the Western Farm Economic Association at Salt Lake City, August, 1932.

Amount of mortgage indebtedness, farms operated by owners:

1920	\$620,607,953
1930	651,862,597
Increase of	\$ 31,254,644

The mortgage debt decreased for six states and increased for five states (Utah, Nevada, Washington, Oregon, and California).

The data thus indicate changes for the decade 1920-30 as follows:

1. A slight but inconsequential increase in the number of farms mortgaged, accompanied by a small increase in the total number of farms.
2. Practically no change in the per cent of mortgaged farms to total farms.
3. An increase—about 5 per cent—in the amount of mortgage indebtedness.
4. Five of the eleven western states bearing the burden of the increase in mortgage indebtedness.

But this doesn't tell the whole story because the higher mortgage burden in 1930 rested on mortgaged farms having a lesser value—\$1,922,842,653 in 1930 vs. \$2,060,748,903 in 1920, a drop of nearly \$38,000,000.

This means that in 1920 the average mortgage debt was 31 cents per dollar of value while in 1930 it was nearly 35 cents per dollar. Up to 1930, then, the actual mortgage situation was not so serious.

Today, if Californian experiences are typical, the shrinkage in land values—and hence equities—is greater by a considerable amount than in 1930, and causes correspondingly greater worry and mounting inability to pay.

Evidence that ability to pay has dropped is indicated by the value of total production of all cereals in these eleven states. The data show:

Summary 1919	\$439,345,964
1929	270,725,082
Decrease	\$168,620,882

The major difficulty lies in the low prices that now move farm commodities. This is an insurmountable obstacle at present. Coupled with low prices are high taxes. Taxes have not decreased very much in the four states with which I am familiar, notwith-

standing that this subject has had much serious consideration. In some communities substantial reductions have been effected, but the great trouble is that most of the tax burden is for fixed charges and schools. Some rural schools are closing earlier than usual; teachers' salaries are being reduced. Many irrigation and drainage districts are defaulting on their bond issues. Note that a dollar increase or decrease in taxes or other avoidable expense is equivalent to a decrease (or increase) of \$16.67 in the basic value of the land (e.g., \$1 capitalized at 6 per cent equals \$16.67).

The Result

Given conditions of a slight increase in the total amount of indebtedness, couple with this a marked falling off in the basic value of lands and permanent improvements, and weighted down with serious declines in incomes, the result is a rapidly mounting list of delinquencies and foreclosures. Low prices for farm commodities, as I have already mentioned, are the primary cause of much of the trouble. If the gross income isn't sufficient to pay bills incurred for living and for farm operating expenses and yet provide enough more to pay interest on debts and to meet installments due on principal, then someone suffers. Eventually if payments are deferred the lenders come into possession of the delinquent farms.

The figures for the Federal Land Bank of the 11th District showing delinquencies as of June 30, 1932 are illuminating:

	<i>Per cent of total loans delinquent</i>	<i>Percent of unpaid principal delinquent</i>
California	21	24
Utah	43	47
Nevada	26	26
Arizona	33	36
All	30	32

As a result of delinquencies that for various defensible reasons resulted in foreclosures the Bank has acquired to date 706 farms having a total value of about 3½ millions of dollars. And bear in mind that no bank—federal or private—is anxious to acquire any farm if such acquisition can be avoided. Of these 706 farms about half have been sold, leaving 377 on hand for which some provision for their handling must be devised. These 377 farms have a value of about \$1,100,000.

Between the time a loan becomes seriously delinquent and the acquisition of that farm by the lender is the period of foreclosure. Foreclosures have certainly been mounting. One bank has had to institute 925 foreclosure proceedings during the past ten years. Yet of this total number, foreclosures during the first six years beginning in 1922 averaged only about 50 per year. The next two years (1929 and 1930) the annual number doubled. From May 4, 1931, to June 16, 1932, 300 cases had to be instituted. Yet, when one considers the number of loans made by this bank on farm properties, the percentage of foreclosures to total loans is not high—about 1 in 20.

The delinquency for the eleven western states averages more than three farms in ten upon which federal loans have been granted. The delinquency runs from 19 per cent for one state to over 45 per cent in the state "enjoying" the highest rate of delinquency. Of all states in the Union, the one that has the poorest record possesses 69.3 per cent delinquent of all farms in that state carrying federal mortgage loans. The best record is held by Rhode Island with but 1.6 per cent delinquent.

So that no misconception be placed on what has just been stated, it is pertinent to add that these rates of foreclosures in the various Federal Land Bank districts are less than the rates of foreclosures by other mortgage loaning concerns. The Land Banks without doubt have the best records in their respective districts.

Problems Arising out of Mounting Delinquencies

As a direct result of the mounting delinquency lists and the necessity of frequent foreclosures, three distinct but nonetheless closely related policies are coming to the front for solution. These three are:

1. Is the present foreclosure policy the best for all concerned? This question raises a query as to the wisdom of closely following a program that requires the taking over of a given property promptly following the failure of the borrower to meet his interest and principal payments.

2. What are the lenders to do with the property acquired through the operation of foreclosures? If they cannot sell, how far are they justified in going with attempts to farm these properties themselves in the hope that eventually they can sell at a price that will reimburse them for their mortgage loans and their subsequent investments in actively farming these properties?

3. What shall be the selling policy that should govern acquirers of foreclosed farms in their attempts to again dispose of their holdings?

Comments on the Policy of Foreclosure

Under conditions as they are today acquisition of most farms by lending agencies results in a liability rather than a gain. Banks in particular are finding this out at considerable cost. Farming to create earnings is expensive—as shall be shown later. Yet foreclosures will (probably ought), to go on. This is true if the borrower walks off or neglects the property so that the equity of the lending agency becomes endangered through counter liens; thievery; enhanced depreciation of buildings, orchards, other improvements and perennial crops; and reduction of value because of the spread of weeds, insects, and other pests. There are doubtless cases where an injustice to the borrower has been done because of hasty foreclosures. There will be fewer of these in the future than in the past if banks' experiences count for anything.

All are duly touched by the effect of foreclosures. It is not a pretty tale that one hears from those dispossessed, even though they may accept the situation with more or less good grace. To see case after case of homes swept away from those who have labored hard to hold their properties and to lose the pitiful equities that they have accumulated leaves a bitter taste in the mouth of the investigator.

There is another side to the picture, however, and that side has to do with loans made in good faith with moneys of a bank or held in trust by it, the responsibility for which is distinctly the bank's. They may be prone to rush to shelter when a storm is imminent, and doubtless this rush has been precipitate at times. To these lenders a slowing down in the rate of foreclosing may well be in order, especially where the borrower can and will continue to farm the property loyally, honestly, and painstakingly. The man best able to handle a given farm is frequently he who has been on it for some years. These men should be dispossessed only as a last resort. When the borrower cannot or will not longer carry on the farming details then a change is certainly in order.

As experience is gained bankers generally are mostly coming to the opinion that wholesale foreclosures do not benefit the bank, the borrower, or the community generally.

*Comments on the Policy of Farming Lands Acquired
through Foreclosure*

Some foreclosures without doubt have been hastened because the lending agencies had an idea that they could farm the acquired lands and make a profit during the interval pending the return of a market for farms, whereas otherwise they would have had to take a loss. It hasn't worked out quite that way.

The figures indicating the experience of farming a group of forty-one farms acquired through foreclosures are illustrative. Expenditures for farming these properties totaled at the end of the season actually amounted to \$39,309.10. But see what happened to income. The estimated income of \$41,526 gave way to an actual income of but \$11,055.22. Thus the net loss, confined to operating expenditures, was over \$26,000.

The reasons why the budget returns did not check out with the actual returns, was less due to the estimated price returns being somewhat higher than the actual (by about 10 per cent), than to inability to correctly forecast yields. The budget returns were based on a total tonnage from all farms of 571 (all crops reduced to a tonnage basis). Yields actually obtained amounted to 176 tons—or 31 per cent of expectations. Drought, insect pests, failure to plant acreage in accordance with preconceived plans, and some shortage of irrigating water all had an influence on the final output of crops.

One concern, handling hundreds of foreclosed farms for its parent bank, immediately calls upon its fieldman to make a complete report of every acquired property and to determine, among other things, as to whether or not the farm is growing the crop to which it is adapted. If the report is adverse no further attempt is made to farm the property no matter how much money has been invested. Prompt changing to crops to which the land is adapted is deemed not only sound from the standpoint of the bank but is more certain to make the place an asset rather than a liability in the hands of an ultimate purchaser. As an example, this concern is owner of a number of peach orchards in the so-called "Peach Bowl" of California (Sutter County) some of which are excellent producers and some are poor producers. The good orchards are receiving excellent care but the poor ones (e.g., those producing under ten tons to the acre and "going down hill") are not receiving a dollar's worth of attention. Instead the trees are pulled up, the land leveled, and summer crops raised, with the result that money is being made out of these "ex-peach orchards" because of the change.

So active farming of lands acquired by lending agencies is working itself out with those who have tried it. Others inclined to do likewise should take a leaf from these experiences. It has been costly experience. Sooner or later the time comes when the bank or other loaning agency must ask itself, "To what extent am I justified in conducting farming operations at a loss?," and many are finding the answer to be: "Only to safeguard the property until such time as agricultural conditions again adjust themselves and a buyer can be found who has a reasonable chance to work out his economic salvation." In California we are finding that the preservation of many vineyards and orchards can easily cost more than to let the vineyards and orchards die, postponing until some future time their re-establishment as productive agencies.

Comments on the Policy of Selling Lands Acquired through Foreclosure

In their anxiety to salvage what they can some loaning agencies are making hard drives for purchasers of lands acquired through foreclosure. This brings up the third of the three policies listed for discussion. After some observation and study I am of the definite opinion that no property should be offered for sale unless it has an intrinsic earning power under today's depressed conditions so that the gross income that may reasonably be expected will be sufficient to pay operating expenses, provide for the family budget, and meet interest payments (plus installments on principal should these be demanded). It takes a good farm in the hands of a competent farmer to do that these days. To sell a farm to anyone who hasn't enough capital properly to finance himself, or enough experience to handle that farm as it must be handled, or to sell a farm the intrinsic productive capacity of which is not sufficiently large to meet the demands that are to be made of it is to invite disaster for the man who embarks on a farming venture insufficiently financed, inexperienced, or incompetent. Then eventually a change to another purchaser must take place with the dispossessed sent on a sadder but not necessarily a wiser man, the process to be repeated until an improvement in conditions is again manifest. Note that I am not attempting to say what earnings should be in order to meet all obligations. The standards must vary with localities, industries, and individuals. But to determine what they are is a task for the economist and the bank. The work must be done conscientiously, intelligently, and thoroughly.

The results of several farms give point to the importance of determining income possibilities the budgets for which, though carefully calculated, fell far short of being satisfactory.

First, as to yields: Here are ten cases given in tonnage, designation of crop not being important:

	<i>Estimated</i>	<i>Actual</i>		<i>Estimated</i>	<i>Actual</i>
1	15	6	6	35	8½
2	20	3	7	58	15½
3	50	15	8	30	11
4	20	4½	9	47	13
5	40	11	10	20	5

Second, as to expectations in terms of money vs. actual receipts:

	<i>Estimated</i>	<i>Actual</i>		<i>Estimated</i>	<i>Actual</i>
1	\$ 750	0	6	1,596	186.30
2	1,900	\$513.67	7	2,734	580.00
3	1,150	266.43	8	7,200	235.21
4	500	0	9	3,000	452.95
5	1,720	713.09	10	1,500	621.44

The analysis of the above is obvious.

There are indications that a demand for farm lands is again in evidence. One large holding company for a private California bank reports a quiet movement in California country lands, with a preference either (a) for farms that are "going concerns"—i.e., equipped with buildings and planted to orchard, vineyard, or alfalfa, or capable of growing irrigated crops; or (b) for farms that are primarily homes, and though not commercial in character nor not likely to be made self-supporting, yet do provide a place to live and from the production of some fruits, vegetables, eggs, milk, etc., materially augment the family living and at a lesser cost than these same commodities can be purchased. This latter type of farms requires that the buyer have some outside income, which frequently means that he must be within commuting distance of a job. This concern reports sales averaging a farm a day of the class first listed for the business days between January 1 and July 1 of this year, the purchase price averaging about \$5000 with down payments a little under 25 per cent. Most of the sales are made to persons living in the community or to persons having friends or relatives living close by the purchased farm.

E. M. Ehrhardt, president of the Federal Land Bank at Spokane, reported a "back-to-the-land movement" resulting in 288

sales of lands to June 11, 1932, priced at \$918,850. In this connection it is interesting to note that Ehrhardt reports abandonment in his district of large-scale mechanical power farming and in its place an increase in the operating of small farms. Ehrhardt believes that mechanical farming has been the main cause of surplus production. He believes that many of the large farms were speculative ventures and could continue while grain prices were high or mounting land prices permitted sales at a profit. With the passing of the chance for speculation, "this menace" (his words) is disappearing.

In any event, a careful analysis of the earning power of farms offered for sale or considered for purchase is vitally needed these days.

In Conclusion

It is easier to outline the situation than to suggest remedies, but policies of foreclosures, sales, and farming by loaning agencies are so interrelated and yet so haphazardly and incompletely thought through that more attention to what comprises the best policy is very much in order. As a basis I suggest:

1. Restriction of foreclosures to only pressing cases, where neglect or robbing of the property is resulting or imminent, or when other claims may endanger the equity or prevent payments to the mortgagee.

2. Determination of the intrinsic earning power of a farm offered or to be offered for sale, with no offerings of property the earnings from which do not hold promise of being sufficient to provide a living for the buyer, meet operating expenses, and take care of interest and principle on mortgage indebtedness. Otherwise another ousting or resale is inevitable with its accompanying disillusioning of those dispossessed and a heritage of trouble for the next purchaser.

3. Farming by lending agencies to be confined to the maintenance of properties for eventual sale.

4. Substitution of tenancy in place of farming by lending concerns. For one thing a tenant usually farms more economically than a hired personnel. Residence on the property is an asset and finally the tenant may develop into a prospective purchaser.

Many farmers have demonstrated that they are not able to efficiently handle substantial amounts of credit. Perhaps this is due to their rather recent entrance into agriculture as a business

and hence they have proceeded with a lack of experience. Perhaps many farmers are essentially laborers and not qualified to handle credit. Many have small equities in the properties they farm. But whatever the reasons it is evident that more leadership in the agricultural credit field is needed and must be supplied from some source. If this were not so then there would not have been a situation of too much credit granted during the era of high prices, followed by a too conservative granting of credit during the recent period of retrenchment.

The present situation is to a large extent, though not entirely, traceable to the granting of too much credit when prices for farm products were on a high plane, coupled, perhaps, with too conservative a granting of credit during the recent period of retrenching. The outcome certainly emphasizes the need of qualified men on the staffs of loaning agencies whose knowledge of agricultural economics and farm management will serve to formulate better policies and grant safer loans than has been the case in the past. There is a real field for the contributions that such men can make: The task is to develop an appreciation of this need and of the really valuable assistance that loaning organizations can thus command. Not only will greater safety attach to the initial granting of loans, but the placing of loans under the management of a qualified economist who by visit and counsel shall keep in touch with each borrower, help him to plan his work, to budget his needs, to buy wisely, to sell equally wisely, and to perform his work on time and well, gives to that borrower information and guidance that experience indicates to be greatly needed. Properly conducted, this work will strengthen the position of both the lender and the borrower and result in less foreclosures and the grief that attaches to these foreclosures. The time is ripe for a marked advancement into this new field of endeavor.

LONG-TERM FARM CREDIT IN A DEPRESSION

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The principal problem in long-term farm credit in the United States in recent years has become one of paying for credits once obtained, in contrast with the pre-war problem of obtaining new credit. The volume of loans falling due has for some time exceeded the amount of renewals and new advances, the average size of new loans is smaller than the loans renewed, and many loans are renewed only on condition of reduction. Despite efforts toward adjusting debt terms and payments, much long-term farm credit is being cared for only at great sacrifice, and inability of borrowers to meet debt service requirements has led to loss of many farms to creditors while delinquency has threatened the ownership of many others.

This course of events characteristic of debt liquidation in a period of declining prices was made more acute by the general business depression accompanied by pronounced declines in farm prices and land values. The extent of this debt distress among American farmers is therefore a point of primary importance, as is the problem of minimizing its undesirable financial and social results.

I

The problem of debt payment first acquired special importance when the total outstanding farm mortgage credits of the country trebled in volume and the trend of farm prices turned downward. A rise in farm mortgages from three billion dollars in 1910 to more than nine billions in 1925 indicated that the American farmer had hazarded more upon promises to pay than he had at any previous period of farm real estate finance. Estimates of the Bureau of Agricultural Economics show both this abrupt rise and the subsequent sustained level of long-term farm credit during a period of twenty years.

VOLUME OF FARM MORTGAGE INDEBTEDNESS (Millions of dollars)

1910	.....	3,320
1920	.....	7,858
1925	.....	9,360
1928	.....	9,469
1930	.....	9,241 ¹

¹ Preliminary.

Although long-term borrowing comprises the major part of all agricultural credit, it rests upon a minor and relatively stable proportion of the total number of the farms of the country. The mortgage debt of 1930 was secured by only 5 per cent more of all farms than was the debt of ten years before, and only about one-fourth of the 178 per cent increase in long-term farm credit during the years 1910 to 1930 was due to increase in the number of properties borrowing. Census reports for owner-operated farms confirm the slow change in proportion of encumbered farms and the comparatively constant rate of increase not materially altered by the unusual activity in land sales prior to 1920 nor by the funding of other debt and by falling prices afterward:

Year	1890	1900	1910	1920	1930
Per cent of owner operated farms mortgaged ² .	27.8	30.0	33.2	37.2	42.0

The principal increase in debt was rather due to the higher price of land in relation to which credit transactions were made and the more frequent recourse to credit in effecting land transfers. The average size of outstanding loans on full-owner farms record the marked difference in dollar burden per mortgaged farm, while the price index indicates the comparative difficulties in carrying debt.

AVERAGE DEBT PER MORTGAGED FULL OWNER FARM

Year	1910	1920	1925	1930
Average debt per mortgaged full-owner farm (dollars) ³	1715	3356	4004	3561
Farm prices ⁴	103	205	147	117

In addition to differences due to the common factor of price change, other differences contribute to unequal debt difficulty. Among other general aspects of the question it may be noted that debt is comparatively heavier on owner-operated farms, on small farms, and on farms in the north central states than on other farms among their respective classes. Owner-operated farms not only comprise 58 per cent of all farms but they also have a higher percentage using credit.

Likewise the ratio of debt to value averages higher on owner-operated farms than on others, being respectively 41.9 and 38.2 in 1925. Lenders usually are more conservative in advances on tenant property. Tenant farms owned by active farmers, how-

² U. S. Census.

³ U. S. Census.

⁴ Bureau of Agricultural Economics. Index base 1910-1914 = 100.

ever, carry more debt than do other tenant farms, the two classes having debt ratios of 41.6 and 35.2 on farms reporting in 1928. The farmer was more willing than others to go into debt for additional land during the period of high prices, hence he became subject to a heavier burden when prices declined. Small mortgaged farms valued at less than \$2500 have average debt of one-half the farm value as compared with 30 per cent for farms valued at \$50,000 or more. Geographically considered, 60 per cent of the farm mortgage credit is in the north central states and the ratio of debt to value is also highest in that region.

Although the prolonged decline in land values has tended toward reduction of owners' equities, the broadening of the base of the total farm-mortgage debt, incident to an increase in the proportion of indebted farms, has contributed to lowering the average amount of credit per farm and to reducing the average ratio of debt to value of the property. The course of the average of this standard criterion of lending policy indicates that the proportion of current value represented by credit on the average mortgaged farm was one-third greater in 1930 than in 1920, but only one-ninth greater than in 1890.

Year	1890	1910	1920	1925	1930
Ratio, debt to value of mortgaged full-owner farms	35.5	27.3	29.1	41.9	39.6

In terms of agricultural real estate as a whole, land-secured credit has risen from approximately 10 per cent of all farm value to 20 per cent in twenty years.⁵

Year	1910	1920	1925	1930
Per cent mortgage credit is of value of all farms	9.5	11.8	18.9	20.0

This striking rise in the volume of indebtedness has often obscured the fact that the total equity has changed to a relatively smaller extent than has the total debt, as shown by the following complements of the above percentages:

Year	1910	1920	1925	1930
Per cent of value of all farms above mortgage debt	90.5	88.2	81.1	80.0

The volume of long-term credit is sometimes erroneously considered as though it were a problem of immediate or impending payment of the principal. Such a view overlooks the fact that the normal course of dealing with farm mortgages, as with other capital credits, is by renewal rather than by full immediate pay-

⁵ Unless otherwise designated, data represent studies of the Bureau of Agricultural Economics.

ment. This fact in nowise necessarily reflects upon the soundness of the credit arrangement since it may represent the most desirable method of serving the interest of both creditor and debtor. Adjustments of loans to security value required by price level changes do not alter this mutual relationship. Neither party typically desires that the loans shall be taken up at once. The essential requirement of this lender-borrower relationship is that current debt services, principally interest and taxes, shall be met. It therefore becomes first a problem of borrower's income, and secondly one of lender's security.

Since annual farm earnings seldom constitute more than a small part of the capital investment, complete clearance of encumbrance from the indebted farm typically occurs only after repeated renewals. During the fairly normal period of 1925 to 1928, the rate at which mortgaged farms were cleared of debt indicated that the average period of indebtedness of the mortgaged farm ranged from twenty-five to fifty years. Renewal and not payment is the rule. The present problem, therefore, is concerned with adjustment of excessive debts rather than with disposition of the main body of outstanding farm mortgage credit.

The extent of excessive indebtedness is most conveniently shown by a distribution of indebted farms on the basis of the proportion which their real estate credit bears to the value of the property. The following percentage distributions of indebted farms on the basis of ratios of debt to value for 1928, 1931, and 1932 represent reports on farm value and debt from farm owners throughout the United States and reveal a comparative similarity of patterns:

TABLE 1.—PERCENTAGE DISTRIBUTION OF MORTGAGED FARMS, CLASSIFIED BY RATIO OF DEBT TO VALUE, 1928, 1931, 1932

Ratio Groups: Mortgage debt to value of mortgaged farms	Percentage of Indebted Farms		
	1928	1931	1932
1 to 25.....	25.3	25.0	25.4
25.1 to 50.....	39.0	37.3	37.9
50.1 to 75.....	23.5	22.0	21.0
75.1 to 100.....	7.8	10.5	10.7
Over 100.....	4.4	5.2	5.0
	100.0	100.0	100.0

Thus in 1931, 62 per cent of mortgaged farms had debt less than 50 per cent of value, only 15 per cent had debt of more than 75 per cent of value and 5.2 per cent above full value; and in 1932 these proportions had changed but little. See Figure 1.

The proportion of farms with debt greater than value has par-

ticular significance because of its past general relation to the proportion of farms foreclosed, as shown by the following comparisons expressed as percentage of all farms mortgaged:

	<i>Per cent of Encumbered Farms with Ratio of Debt to Value over 100</i>	<i>Per cent Encumbered Farms Foreclosed for Debt</i>
1928	4.4	4.9
1931	5.2	5.2*

The final test of the severity of debt burden is foreclosure or transfer by voluntary deed whereby the owner surrenders title to the property rather than continue to meet debt service costs. The land banks have noticeably increased their number of farms owned outright or subject to redemption.

Number of farms owned by federal and joint stock land banks⁷:

<i>Year</i>	<i>1929</i>	<i>1930</i>	<i>1931</i>
Federal land banks	6641	8532	13,522
Joint stock land banks	2133	2801	4958

The rate at which farms have been lost to their owners through foreclosure and forced sale on account of debt for the country as a whole has been comparatively constant during the past six years, as indicated by the percentage which number of foreclosures bears to all farms.⁸

<i>Year (ended March 15)</i>	<i>1926</i>	<i>1927</i>	<i>1928</i>	<i>1929</i>	<i>1930</i>	<i>1931</i>
Per cent of farms foreclosed	1.74	1.82	1.76	1.48	1.57	1.87

Even the drought and depression years of 1930-31 did not greatly change these proportions of losses in foreclosures which have occurred since the industrial and price reverses of 1929. Moreover, the recent rate of loss is not greatly different from the proportion of foreclosures that occurred in 1920-23, as indicated by comparison of data for fifteen midwestern states.

<i>Year</i>	<i>Jan. 1920- Mar. 1923</i>	<i>1925-26</i>	<i>1926-27</i>	<i>1927-28</i>	<i>1928-29</i>	<i>1929-30</i>
Per cent of farms foreclosed per year ..	2.45	2.27	2.29	2.25	1.96	2.05

It would, therefore, appear that for a decade there has been a fairly constant proportion of farms which have been lost to their owners on account of debt and that this situation has not greatly changed since 1929. In the aggregate these transfers on

* Projected nine months at rate of change for 1930.

⁷ Federal Farm Board Annual Reports.

⁸ *Farm Real Estate Situation*, U.S.D.A. Circular No. 209. For comparisons for geographic divisions see U. S. Department of Agriculture Technical Bulletin 288, *Farm Mortgage Credit*, by the author.

account of indebtedness have contributed substantially to the completion of much debt liquidation since 1920 when the movement toward reduction of agricultural indebtedness began. The results of this movement, which has proceeded from west to east, have become most clearly evident in the mountain states, as shown by the low proportion of high debt ratios in that region. Among principal mortgage-using areas modal groups have lowest ratios in the West and highest in the north central states.

TABLE 2.—PERCENTAGE DISTRIBUTION OF RATIOS OF DEBT TO VALUE OF MORTGAGED FARMS, JANUARY, 1932, BY GEOGRAPHIC DIVISIONS^a

Geographic Divisions	1 to 10	10.1 to 20	20.1 to 30	30.1 to 40	40.1 to 50	50.1 to 60	60.1 to 70	70.1 to 80	80.1 to 90	90.1 to 100	Over 100
New England.....	5.4	15.5	20.3	19.0	10.8	13.5	10.1	1.4	.7	2.0	1.4
Middle Atlantic....	6.7	12.0	15.9	17.7	15.8	11.0	8.0	5.2	2.5	2.7	2.5
East North Central	3.9	10.0	12.6	16.7	16.6	10.0	8.7	7.5	4.1	4.7	5.2
West North Central	4.2	9.6	13.5	13.1	13.6	9.5	10.0	7.2	5.4	6.3	7.6
South Atlantic....	7.0	14.5	13.8	17.5	13.2	9.0	6.3	5.7	4.1	5.0	3.9
East South Central	6.9	14.5	15.0	16.8	14.0	10.0	5.3	4.8	4.8	3.1	4.8
West South Central	7.3	13.1	17.0	16.7	15.2	9.5	7.9	4.5	2.9	2.8	3.1
Mountain.....	6.6	13.4	18.9	16.2	14.7	9.0	8.1	5.0	2.6	2.2	3.3
Pacific.....	7.6	16.1	21.2	16.6	14.6	7.1	6.5	3.2	1.3	2.2	3.6
UNITED STATES	5.7	12.0	15.3	15.7	14.6	9.5	8.3	5.8	3.9	4.2	5.0

The indebtedness position of farms in 1931 is suggested by a distribution of a group of representative farms on the basis of their ratios of debt to value, both debt and value being reported by the owner of the farm. This array indicates that in all geographic divisions the great majority of farms either had no encumbrance or had loans of moderate size in proportion to farm value; about 4 per cent had debt ranging from 75 per cent of value to full value, and 2 per cent had debt greater than value. This frequency distribution is shown by the following figures. Despite some probable disparity between income and value these data indicate that only a small part of all farmers have such indebtedness on their farms as to prevent carrying out their contractual arrangements.

Ratio Group Per cent of Debt to Value of Farm	Per cent of All Farms ^a
0	60
1-25	10
25-50	15
50-75	9
75-100	4
Over 100	2

^a Based on 16,704 farms.

^b Based on 1930 census for owner-operated farms and Bureau of Agricultural Economics studies of relative mortgage frequency on farms of other tenure.

The moderately indebted farm may be expected to be cared for even with the reduced farm incomes recently prevailing. Payment of many comparatively heavy loans is being accommodated by modification of terms. Both with respect to the term of years permitted and the method of payment, noticeable change is occurring to facilitate adjustment. The example set by the land banks in providing long-term loans on farm real estate found comparatively little following for many years save among the state systems. That the adverse experience of recent years has resulted in some recognition of the desirability of synchronizing payments and income is indicated by the following percentage distribution of new loans by method of payment as reported by mortgage bankers since the depression began. Quite clearly there has been a pronounced increase in the use of periodic applications on the principal of non-land bank loans. Distribution of new loans by mortgage bankers follows:

	Straight loans, payment at end of term	One or more pay- ments but not for every year of term	Payments each year of loan term but not paying off entire debt	Amortization com- plete payment of principal during term
1929 (11 States)	90.7	2.2	7.0	.1
1930 (23 States)	47.7	7.6	38.3	6.4
1931 (16 States)	34.8	3.8	60.7	.7

These data would seem to indicate a belated recognition of the security value of gradual debt reduction, particularly during a period of falling prices. As between the two extremes of the long, thirty-year amortization loan of the land banks and the dominant, short-term straight payment loans of most other agencies, necessity has enforced some compromise.

The crucial problem in debt payment is presented by the small percentage of farms which have debt in excess of or approximating the full value of the property.

A part of these cases will not economically justify continuation of the debtor-creditor relationship. Those cases in which the present owner is an effective operator and the farm is an effective economic unit are deserving of special attention, with a view to reaching a mutual desirable adjustment.

The distressed loan typically represents an error of miscalculation by both borrower and lender. In seeking their respective interests when the loan was made the lender extended more credit than subsequent conditions have permitted him to collect and the borrower obtained more credit than he has been able to carry. Typically, neither party desires to have the title of the

farm pass, since change of status of the property compels change of function which neither desires to assume. When the debt has become approximately equal to value and equities have practically disappeared each party to the contract is able to see the limits beyond which he cannot profitably follow his prerogative. The conservation of the small remaining interests of both calls for the elimination of all avoidable waste which may be incident to delay, neglect, discouragement and legal procedure.

The determination of feasible loan arrangements must in the last analysis be governed largely by the debtor's income, hence the gross farm income of the country is a significant indicator of the earning capacity of individual farms.

GROSS FARM INCOME
(*Figures in billions of dollars*)

1924	11.3	1928	11.7
1925	12.0	1929	11.9
1926	11.5	1930	9.3
1927	11.7	1931	6.9

In view of the severely limiting power of income, a realistic attitude in the present circumstances suggests that in debt distressed cases of obvious nature the farm's production might well be made the criterion of adjustment. A contract carrying provision for payments measured in terms of a share of the crop or its equivalent should, if faithfully executed, provide for the maximum payment permitted by capacity and offer ground for enlisting the borrower's full effort and cooperation.

A degree of the speculative element probably prevents settlement of many cases which otherwise might become the subject of adjustment. Where this uncertainty of future values is a consideration some allowance may be made for it by stipulating that payments shall be in terms of a commodity rather than expressed in units varying with prices. Although fixed obligations of some lenders may prevent such payment arrangement other creditors could undertake contracts of this form without that handicap.

Although the adjustment of excessive indebtedness constitutes the immediately pressing problem in farm mortgage credit, the extensive liquidation of the past several years suggests that it is a passing though painful phase.

II

Although temporarily superseded by consideration of debt payment, a longer view of long-term farm credit requires attention also to the supply of such credit and the adequacy of appropriate facilities in the light of tests offered by recent experience. The events of the war-time boom and the succeeding reaction have been further supplemented by the depression following 1929, in providing a fair demonstration of the strength and weakness of various agencies as sources of supply for farm mortgage credit under both normal and abnormal conditions.

The long-term farm credit of the country in the peak year for such credit, 1928, was held by principal classes of lending agencies in the following proportions:

Life insurance companies	22.9	Retired farmers	10.6
Federal land banks	12.1	Active farmers	3.6
Mortgage companies	10.4	Other individuals	15.4
Joint stock land banks	7.0	Other agencies	7.2
Commercial banks	10.8		

About 60 per cent of these agencies' loans represent sources outside the communities in which their loans are made while the funds provided by the remaining agencies originate largely in the same community in which the credit is extended. This distribution has represented a marked improvement over that existing in 1920 and earlier as shown by the following comparison. In 1920 local banks held one-half of the 35 per cent of all mortgages held by the four leading classes of lenders but eight years later held only one-fifth of 52 per cent of the total. The banks having demonstrated inadequacy in lending power before 1920, afterward revealed inadequacy in stability so that from the 1920 situation in which they were the most important source and local capital provided the major part of all farm mortgage funds, the banks have receded to a position of minor importance with most farm mortgage credit supplied by outside agencies.

HOLDINGS OF PRINCIPAL LENDERS AS PER CENT OF TOTAL FARM MORTGAGES

	1920	1928
Commercial banks	18.4	10.8
Life insurance companies	12.4	22.9
Federal land banks	3.6	12.1
Joint stock land banks .....	.7	7.0
Totals	35.1	52.8

The abrupt decline in prices in 1920 and the ensuing reduction in bank deposits revealed the unsuitability of institutions whose funds are subject to withdrawal or other sudden contraction, as a source for long-term agricultural credit. The continued retreat from their leading position in 1920 indicated that the banks had entered a field which they were not prepared to hold under adverse conditions and under competition from agencies better designed for the purpose. As prices and land values continued to decline and real estate loans continued to

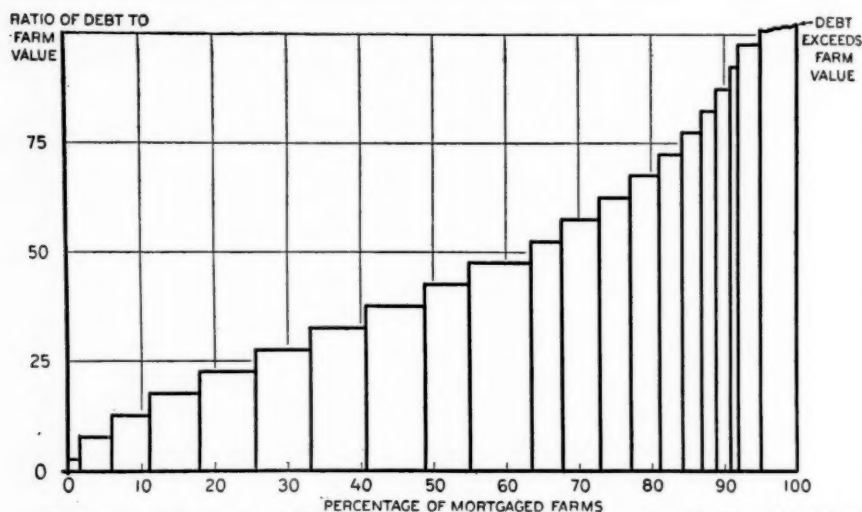


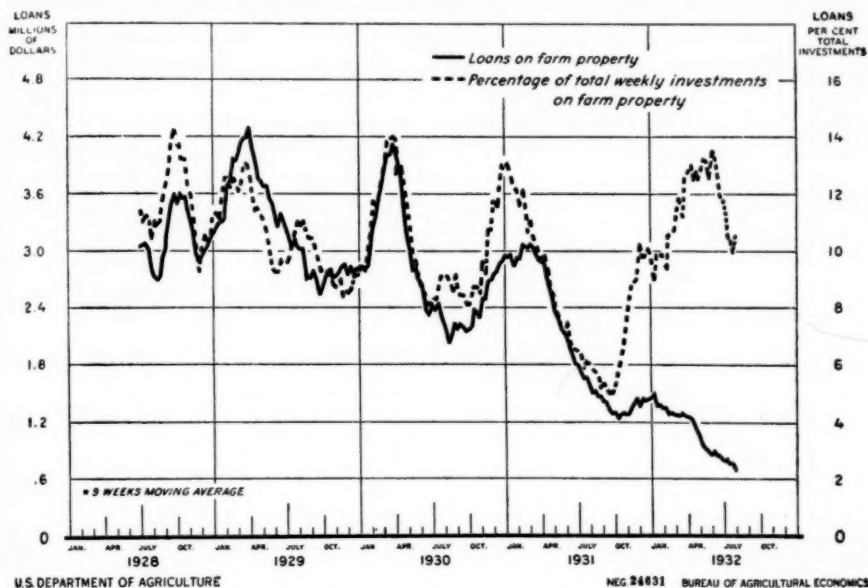
FIGURE 1.—Percentage Distribution of Mortgaged Farms, by Ratio of Debt to Value, January 1, 1932.

contribute to the heavy mortality of country banks, the contradictory nature of long-term capital credits and the unstable basis of commercial bank lending has become more evident. It was not until the years 1929-32, however, that it was revealed that the specialized long-term lending agencies might also be subject to such extensive withdrawal of funds as to effectually remove them from the field of active lending.

Soon after 1920 life insurance companies acquired undisputed leadership in volume of farm loans held. Aided by an increasing supply of loanable funds incident to growth in assets, the companies were able to absorb many new loans as well as to take over much of the credit which banks and individuals desired to transfer. Their loans on farm property were particularly heavy during 1920 and 1921 when the land banks' loaning

was temporarily reduced, and again in 1923, the peak of activity for outside lenders. The depression of 1920-21 was accompanied by some reduction in loans, but the effect on the borrowing community was largely offset by increases from other sources.

Modification of policy was in the making in 1925 when the five-year loans of the high price years fell due and the question of renewal arose. A decline in holdings of insurance companies



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FIGURE 2.—Farm Mortgage loans and per cent loans are of total weekly investment, 25 life insurance companies, 1928-1932.

began when real estate owned began its increase, from 1.8 per cent of investments in 1926 to 2.8 per cent in 1931.¹⁰

Upon the advent of the depression beginning in 1929, however, insurance companies were at once confronted with heavy demands for policy loans. Lapses and cash surrenders further reduced loanable funds so that the demand for cash realization resulted in an increase in policy loans from about 1800 million dollars at the close of 1928 to 2900 million dollars at the end of 1931, or from 12.2 per cent of investments to 15.9 per cent.¹¹ Policy loans in 1930 absorbed 30 per cent of the total increase in investments. Ordinarily a source of long-term investments, the life insurance companies have been called upon in an emergency

¹⁰ Annual Reports of Association of Life Insurance Presidents.

¹¹ *Ibid.*

to supply short-time funds. The difficulties of the commercial banks have accentuated this necessity for the insurance companies to perform the banking function. These developments had a severely restrictive effect upon the total amount of funds available for investment and the amount of farm mortgage funds. New farm loans, including renewals, of 226 identical life insurance companies, declined from 279 millions for the year 1927 to 194 millions for 1930. Only in the Pacific area did an increase occur in outstanding loans.

The average total volume of weekly investments of 25 leading insurance companies declined three-fourths from 1928 to 1932, and the amount of funds placed in farm mortgages has been reduced a corresponding amount, as follows:

AVERAGE WEEKLY INVESTMENTS IN FARM MORTGAGES OF LEADING LIFE INSURANCE COMPANIES¹²

	1928 ¹³	1929	1930	1931	1932 ¹⁴
Average weekly investments in farm mortgages (1000 dollars)	3,130	3,092	2,827	2,011	1,049
Average per cent of total investments	11.4	10.2	10.0	7.6	11.8

The smaller commitments in agriculture thus appear to be principally a part of an enforced curtailment of general investment activity consistent with distribution of risk. With the exception of 1931, however, the percentage of total investments loaned to agriculture has continued essentially the same. (See Fig. 2.)

In times past when one source of funds was removed or proved unable to continue its lending operations, increased activity on the part of other agencies compensated for the loss. When commercial banks discovered the necessity for greater liquidity following the War, insurance companies and the land banks made farm mortgage loans in increased volume, and in 1920-21 when litigation forced the land banks from the lending market pending decision as to their legality, the insurance companies made large loans which did much to meet the demand. In 1930-32 each agency has been handicapped in its capacity to loan.

During the depression following 1929 the land banks have been limited in their lending capacity by the combined circumstances of a high bond yield market, the 6 per cent limit on loans to borrowers provided in the Federal Farm Loan Act, and the

¹² Computed from data in *New York Evening Post*.

¹³ Last 28 weeks.

¹⁴ First 36 weeks.

delinquent condition of many national farm loan associations through which loans are made. Not since 1928 have the Federal Land Banks offered a bond issue other than for small amount and short term. In 1929 the average yield on their bonds rose from 4.26 per cent to 4.78, in 1931 they averaged 5.34, and in September-October of that year the average rose above 6 per cent, or higher than the rate at which the banks were permitted to loan. Following the appropriation by Congress of \$100,000,000 addi-

TABLE 3.—FARM MORTGAGE LOANS MADE BY FEDERAL AND JOINT STOCK LAND BANKS AND ALL LIFE INSURANCE COMPANIES

Net increase or decrease in outstanding loans (in millions of dollars)				
Year	Federal Land Banks ^a	Joint Stock Land Banks ^a	All insurance companies ^b	Total
1917	30	0	94	124
1918	126	8	62	196
1919	137	52	-43	146
1920	56	18	230	304
1921	83	7	226	316
1922	207	134	123	464
1923	160	174	235	569
1924	128	54	150	332
1925	78	99	87	264
1926	72	87	93	252
1927	78	35	49	162
1928	39	-11	-34	6
1929	3	-29	-30	-56
1930	-10	-37	-50	-97
1931	-25	-54	-35	-114

^a Annual Reports of the Federal Farm Loan Board.

^b Estimated on the basis of 52 companies' reports.

tional capital and \$25,000,000 to absorb extensions, the average bond yield declined to 5 per cent in September, 1932.

The average operating margin between bond yield and rate to borrowers during the fifteen years of the Federal Land Banks' operation has been .88 per cent, and if only years of bond issue are included the average has been 1 per cent. During the ten months, July, 1931, to April, 1932, inclusive, the average bond yield was .15 of 1 per cent above the loaning rate. In other words, loans were made at rates lower than what money would have cost in the outside market. Even though the rate to borrowers had been placed at the maximum limit permitted, the margin for operation in 1931 would have been only .66 or two-thirds of that shown necessary by previous experience during more normal times. Since 1928, however, expenses of the land banks have been heavier than formerly incident to delinquency and foreclosure operations, hence a wider expense margin has been needed.

As a result of this rising money cost and larger operating margin required, the land banks have found themselves effect-

ually cut off from the money market on which they rely for making loans in any considerable amount. Loaning operations have had to be confined chiefly to the amount permitted by repayments on installments due on outstanding loans. Legitimate demands above this amount could not be met because of the 6 per cent limit fixed by law.

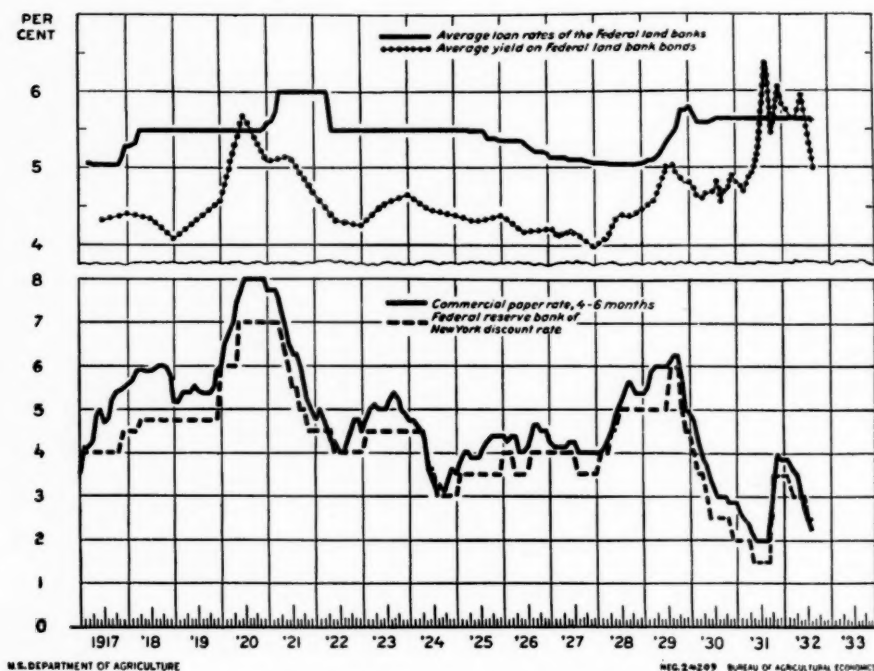


FIGURE 3.—Federal land bank bond yields and rates to borrowers.

Twice in the fifteen years' experience under the Federal Farm Loan Act the law itself has prevented full service to agriculture because it attempts to set a limit to loan rates. In 1920-21 and in 1929-32 the law has thus proved an obstacle. This difficulty has been repeated despite the fact that the 1920 Census showed an average interest rate on farm mortgage loans of 6.1 per cent for the country and that the 1930 Census likewise showed 6.1 per cent as the cost of interest and commission. If approximately .2 of 1 per cent is allowed for local commission, it is readily seen that many loans must be made at rates in excess of 6 per cent if the farmer is to be financed.

The joint stock land banks have so nearly disappeared from the active loaning field that the forty-nine institutions made only

874 new loans during 1931. A total of eighty-three joint stock bond issues were priced on May 28, 1932, at an average of forty-four and ranged from 4 to 86 per cent of par. Under these conditions the joint stock land banks have not only been unable to issue bonds but they have found it more profitable to use the proceeds from payments on loans to buy up and retire their own bonds rather than to reloan the amount at not over 6 per cent.

Thus each of the principal lending institutions providing long-term farm credit has been found to have imperfections for supplying the financing demands of agriculture. In consequence of the severe restrictions on access to outside sources of funds during periods of high rates, the market is either shut off from farmers or it is forced back in some degree to the simpler but less satisfactory procedure prevailing in pre-war years in which individual borrower and lender undertake to find mutually agreeable amount, term, rate, and other loan conditions.

Some evidence of this shift to individuals as a market for loans is shown by recent operations of mortgage bankers. In 1930, 16.8 per cent of such loans were marketed with private investors as compared with 9.6 per cent in 1929. The distribution of farm mortgage loans made by mortgage bankers follows:

	<i>Insurance Companies</i>	<i>Private Investors</i>	<i>Trust Companies and Savings Banks</i>	<i>Others</i>
1931	71.2	17.4	2.9	8.5
1930	76.4	16.8	.9	5.9
1929	88.0	9.6	1.7	.7

The depression has shown more clearly than further progress in farm mortgage finance requires greater reliance upon institutions functionally adapted to the nature of the responsibility, the elimination of arbitrary loaning restrictions which have no basis in economic experience, and general recognition of the necessity of abandoning short-term viewpoints and measures in dealing with a long-term problem.

This depression has demonstrated again the futility of legal regulations restricting interest rates to an arbitrary maximum under all conditions; that such provisions during periods of money strain must result in occasional serious interruptions in loan service and the limiting of operations at all times to a group of conditions narrower than economically desirable.

THE WHOLESALE POULTRY BUSINESS IN SAN FRANCISCO

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The wholesale poultry business in San Francisco in the spring of 1932 is in the throes of a readjustment which apparently when completed will have modified certain of the trends of the past four years. An analysis of the trade structure at the climax of the prosperity period in 1928 and 1929 would have led to conclusions as to the immediate outlook for the various classes of dealers quite contrary to those of the present.

A detailed description of the wholesale trade mechanism at the beginning of 1930 is the best point of departure for the presentation of the long time trends of the previous thirty years as well as the adjustments of the depression years. Statistically speaking, the wholesale poultry business of San Francisco at the beginning of 1930 involved the following classes of enterprises:

<i>Classes of enterprise¹</i>	<i>Number</i>
General produce dealers	25
Wholesalers	9
Retail-wholesalers	8
Meat packers	4
Produce brokers	2
Cooperatives	2
Producer-wholesaler	1
Hucksters and commission buyers	36
Total	87

However, here as usual, the qualitative aspects are much more significant than the quantitative. The general produce dealers were a relatively minor factor in the market, selling probably under 5 per cent of the total volume. Of the twenty-five firms listed, only two carried poultry on hand each day; the balance of the firms handled small amounts of poultry at irregular intervals becoming most active during the holiday season. In all instances, the poultry business was an adjunct of the general fruit and vegetable trade.

The regular wholesalers were by far the dominant factors in the trade. Most significant is the fact that three of these houses

¹The writer is indebted to Mr. Donald Sham for assistance in field work in interviewing the various firms. All of the houses that might be involved in the poultry business were visited.

operating under a combination holding and operating company arrangement, obtained probably more than 70 per cent of the total volume in San Francisco. The retail-wholesalers as their name suggests were primarily retailers doing some wholesaling. In this respect they differed from the wholesalers *per se* only in degree for practically all of them, too, would accept whatever retail business came to them. However, the direct-to-consumer sales were relatively negligible for the regular wholesalers as a group. The eastern meat packers were engaged primarily in the sale of frozen eastern poultry; one of the local packers had a considerable volume of fresh poultry. The brokerage business was practically non-existent although two produce brokers occasionally sold small amounts of poultry in connection with the general produce business. Of the two cooperatives, one was a turkey growers' organization which had just been formed; the other was a powerful poultry association which sold some poultry on a voluntary basis for its members or others but had concentrated its effort on its egg business. The producer-wholesaler was a duck producing company with a capacity of 75,000 ducks every nine to ten weeks, although this maximum capacity was not being utilized. The hucksters were a small active group located in San Francisco or elsewhere and engaged in collecting poultry in the country and supplying the wholesale dealers. In 1930 this group was up in arms because the dominating wholesalers had been establishing their own country receiving stations and often bought direct from the farmers.

Familiarity with the type of trade solicited by the various classes is essential to the analysis of trends. The general produce dealers stood willing to trade with anyone but were for the most part selling to the large dominant group of wholesalers through its central buying organization. The wholesalers, large and small, would deal with anyone, receiving their largest volume from the retail and institutional trade. It is interesting that there was no "jobbing" element in the trade since the wholesalers purchased directly from the country or other dealers and sold directly to the retail trade without the intervention of any other intermediary. As indicated above, the retail wholesalers were largely engaged in the retail business. The meat packers were selling to all buyers except consumers, but concentrating upon the institutional and chain store business. The brokers, in so far as they were a factor, dealt largely with the dominant group of wholesalers and the packers. The turkey cooperative sold only

to wholesalers; the poultry cooperative to all buyers. The hucksters and commission buyers served the wholesalers primarily although there was a small volume of business with the retail and institutional trade.

The following trends were of primary significance during the period 1900-1930:²

1. The decline in the importance of the produce dealers in the handling of poultry.
2. The merging of wholesale interests culminating in the formation of the large holding and operating company in 1928 as the dominant factor in the market.
3. The decline of the brokerage business in poultry.
4. The entrance of farmers' cooperatives into the central market.
5. The early gradual expansion of the operations of the meat packers in the sale of frozen eastern stock, counteracted in part towards the end of this period, as Pacific coast sources of "colored" supplies developed.

Twenty years ago the produce dealers distributed from half to three-fourths of the poultry that came into San Francisco; in 1930 probably less than 5 per cent of it passed through their hands. This extraordinary change is explained in three ways:

1. The inherent difficulties involved in handling poultry along with the general produce lines.
2. The weaknesses of the consignment method of selling.
3. The merger movement among the wholesalers.

The handling of poultry is inevitably unduly burdensome for produce merchants and hence would readily yield to competitive pressure. The odor from live poultry is easily conveyed to fresh fruits and vegetables; thus separate warehouse space is required. Also, live poultry requires considerable care if losses from shrinkage of weight or death are to be held to a minimum. Conversely, dressed poultry requires special facilities for dressing and for refrigerated storage.

Important, too, are the weaknesses of the consignment method of selling. Producers had a decided preference for cash; so much so that there is a decided tendency even among commission houses to buy outright. The commission merchants often received only the poorer quality of stock on consignment; the higher qualities were sold on the cash market. Also, the diversified

² An annual enumeration by classes could not be made because of the impossibility of segregating the poultry business from the produce business throughout this entire period.

farmer who raised poultry merely as a complementary line, often with no particular regard for quality, would tend to use the consignment method, particularly if he were shipping other produce. The lack of control over the rate of flow into the market tended to interfere with efficient selling effort and opened the market gates for firms that could maintain regular stocks. Retailers found the produce dealers unsatisfactory sources of supply since they usually wished dressed poultry and a wide range of choice. Obviously, the lack of control of shipments would react disadvantageously upon the consignors when the market happened to be glutted. Finally, the customary frictions developed between the commission houses and their customers, culminating in the Acts of 1927 and 1929, providing for the bonding, licensing, regulation, and supervision of produce dealers in California.

Clearly, the system of marketing poultry through the general produce dealers could offer no serious obstacle to distributive methods without its inherent weaknesses. As it was, these houses became dependent upon the wholesalers since they were not equipped to dress and carry poultry.

The growth of large, well equipped wholesale houses through a process of expansion and merger very quickly removed the commission firms as significant factors. The foundation of the structure which reached completion in 1928 and 1929 was laid in 1910 when four leading poultry firms joined resources. In 1915 one of these firms withdrew and operated independently. In 1927 however, this firm was restored to the fold when the company which had just purchased it joined the larger consolidated interests. This movement culminated in 1928 in the formation of an extraordinary holding and operating company with manifold ramifications.

The rôle of this central organization can best be portrayed by a description of the interests which it acquired. The basis of its structure was the holding of stock in the two firms mentioned above, which, by the process of purchase, merger and expansion had become the leading firms. The foundation was greatly strengthened in the following year by the addition of the third of the leading wholesale firms of the city. Each of these firms remained in operation as separate units. In the meantime two other San Francisco houses were acquired and closed along with two East Bay firms which were merged. When completed the outreach of the corporation involved the following in addition to the basic local units already mentioned:

1. One of the large poultry wholesalers of Los Angeles.
2. Receiving, feeding, and dressing plants in three important producing areas.
3. Receiving stations at twelve additional points in the producing areas in California.
4. One of the largest wholesalers in Portland, Oregon, plus two receiving stations in that state.
5. The purchase and merging of two firms in Seattle and the operation of two additional small receiving stations in Washington.
6. A receiving station in Nebraska together with three smaller receiving plants which operated only seasonally.
7. A receiving station in Idaho. Here, too, three smaller plants were operated during the busy season.
8. Branch offices in New York City and Honolulu.
9. A small chain of retail stores in San Francisco, dealing in poultry and dairy products.

The basis of the organization was the local units which were acquired by an exchange of securities. These units operated for the most part separately in selling but purchased a large portion of their poultry through the central firm. The list of advantages that this merging of receiving and selling interests was presumed to achieve makes an impressive showing. In the first place, the quality of the service rendered the trade would be far superior to that available outside the group, for in addition to the usual credit, delivery and miscellaneous selling services, wide stocks would be available at all times. Member units were in a position to exchange stocks of poultry, too, when any one of them developed a shortage in any line. No other factors in the market were in a position to offer the same assurance of ease of access to stocks as this central group.

In the second place, undue price cutting would be restrained. It is significant that in 1927 before the consolidation was organized there was very serious price cutting; so much so that it was stated by the head of one of the houses, "We were paying more for live poultry to the producers than we were receiving for dressed poultry from the retailer." Unfortunately, the price quotations available for this period are only for live poultry and therefore it is impossible to demonstrate the degree of price cutting which took place. Since live poultry prices in the spring and summer of 1927 were lower than the preceding and following years it seems reasonable that there was a basis for a price war.

In the third place, the anticipated economies of operation alone appeared to justify the concentration of resources. It was assumed that the purchase costs of stocks might be reduced both by buying in larger quantities and by eliminating some of the competitive bidding for supplies. Also, some economies were anticipated from the elimination of the margin of some middlemen by establishing receiving and feeding stations in the producing area and by the reduction of duplicative facilities. In both the buying and selling end some duplication was eliminated by the closing or merging of the establishments which were taken over. Delivery expenses were to be reduced by the centralized routing of deliveries. Finally, credit losses might be reduced by more effective cooperation in this field.

In the fourth place, it was hoped that exterior markets as well as exterior sources of supply might be cultivated. To this end, wholesalers in the other important coast cities were brought into the group; selling offices were opened in New York City and Honolulu; and receiving plants in Nebraska, Idaho, Oregon, and Washington.

In the fifth place, the control over supply which would be achieved would tend to eliminate the evil of gluts and famines, which was particularly serious in the sale of eastern stocks.

In addition to these anticipated advantages apparently the general conception in the minds of the organizers was to build a controlling mechanism which would make for stability of operation obtainable only from the restriction of competition in the business. The result was that in 1930 the poultry business of San Francisco was largely in the hands of one group.

Before analyzing the results achieved by this organization it is necessary to revert to the analysis of the other long time trends to 1930. Brokers had never been particularly important in the poultry business; by 1930 they were practically negligible. Brokers find their prime justification in assisting in bridging the gap between distant, scattered, and numerous buyers and sellers; and all of these conditions were changing. Distance factors were no longer as significant because a smaller proportion of poultry constantly was procured in the Middle West or at other exterior sources. And the merged interests completed the debacle of the brokers here by going directly to these exterior areas. The numbers and scattering of buyers and sellers was being reduced by cooperative marketing among farmers and the merging of wholesale interests. For instance, the large poultry cooperative in

San Francisco now deals directly with a similar organization in Utah; whereas a broker formerly represented the Utah group. The Utah cooperative also deals directly with the packers. Also, brokers were handicapped because poultry was often handled very unsatisfactorily when received in San Francisco.

The next important trend to 1930 was the entrance of the two farmers' cooperative organizations into the San Francisco market. As early as in 1921 there had been considerable agitation among members of the organization serving the egg producers to add facilities for the marketing of poultry. In 1926 this demand was met and this business has been increasingly important since and has been a constant threat to the other factors in the market in spite of the fact that selling through the cooperative is not compulsory upon the members. In 1929 a turkey cooperative entered the market. Unlike the poultry cooperative it has refused to go over the heads of the wholesalers to date. Apparently, the poultry cooperative would have preferred to deal only with the wholesale trade but was forced into the business by difficulties in moving stocks. The turkey producers would find it much more difficult and expensive to maintain the facilities essential to direct selling since they have only one product, and it, unfortunately, of a seasonal nature. The position of the poultry producers was much more favorable to the elimination of the wholesalers since poultry is much more staple and the egg marketing facilities were already well established.

Finally, competition from the large middlewestern meat packers was increasing, particularly in the sale of eastern poultry. The packers were peculiarly well equipped to handle poultry as a supplementary line; in addition they have developed special facilities in the fresh killed field such as receiving plants, and their own duck and poultry farms in two instances. However, the sales of packers were always relatively minor except in the eastern trade and to large scale buyers as chain stores. Towards the end of the period, eastern stocks became less important as "colored" supplies developed on the coast.

So much for the trends to 1930. If this analysis had been made then, the evaluation of the trade trends in the immediate future would without doubt have been different than at the present, for at that time it appeared that the consolidation of large wholesalers would improve its already dominant position in the business. Since 1930 the following developments have taken place:

1. The decline of the produce dealers as factors in the poultry

business has continued so that they are probably not obtaining over two to three per cent of the volume. In fact, only one house now carries poultry regularly.

2. The brokers have ceased to be even a negligible factor in the market.

3. The two cooperatives have become increasingly influential. Particularly important has been the opening of a new plant by the poultry producers association providing very exceptional facilities for handling poultry. Among the facilities are a feeding room capable of housing 30,000 birds in batteries, two freezing rooms, one designed to pre-cool 6,000 pounds of fresh killed poultry daily, the other designed to freeze 10,000 pounds daily, a large sales refrigerator, modern mechanical equipment, etc. The cooperative has been expanding its operations and seems to be in a position to continue its growth in this field. One of its chief problems has been the maintenance of supply on the voluntary basis. It would not be unexpected if the members eventually agree to a compulsory contract. Unfortunately from the standpoint of the price of poultry, it has been a factor making for price cutting in its efforts to become established in the market.

4. The meat packers have become increasingly influential relatively, in the sale of frozen stocks to large scale buyers. However, since eastern poultry is becoming decreasingly important it appears that the packers must push the sales of fresh killed poultry to maintain their position.

5. Most significant, the large consolidation of wholesale interests is admittedly a failure; so much so that a thoroughgoing process of retrenchment and readjustment is being carried out. Without doubt the lack of success is attributable in large part to the depression; yet it appears that operating difficulties would have developed eventually even in the best of times. Any large organization inevitably arouses opposition; in this instance it appears that antagonism was unnecessarily solicited. Farmers were antagonized by the policy of fighting the cooperative as well as by what appeared to be arbitrary pricing operations. Retailers had no reason to feel well pleased with the ownership of retail stores. The hucksters who were often omitted began to solicit a small amount of direct retail business. Obviously, all competitors were actively engaged in efforts to remove trade. Also, two new small wholesale houses were established, partly because of the desire to share in the spoils which seemed pre-

pared by the stabilizing activities of the consolidation; partly because the depression forced men who had sold out back into the only activity that they knew. The smaller independent houses have been increasing their proportion of the business.

Soon it began to appear that the alleged advantages were not as real as certain handicaps. Interference in the activities of the member firms apparently was resented. Most serious was the fact that mistakes made by employees in the purchase of poultry at and for the country receiving stations were very costly. Inherently, purchase from hucksters who bring the poultry to the door seems to be more efficient than going directly to the farmers. Too much overhead had been accumulated, particularly in equipping the branches at exterior points, and in central office administration. Also, speculative ventures into the egg business proved costly. Hence, a policy of retrenchment has been pursued which has led to the closing of many receiving stations, the return to buying from hucksters, and the elimination of the out-of-state sales offices, and the return for the most part to independent operation on the part of the units involved.

To an outsider, unable to obtain many of the details of operations, it appears that this merger like many others of our prosperity period was a luxury product of a boom era and that the reversal of the depression may be merely another evidence of the good that such periods may bring. It is probable that had this combination been formed say in 1923, that it might have proven relatively successful; at least long enough to have allowed the promoters to have unloaded the securities on the public at a profit if they had wished. In addition to the disadvantages mentioned in the above paragraph there is the fundamental consideration that if the merged interests had become sufficiently dominant to stabilize the market, they would inevitably have attracted a large number of small competitors due to the ease with which the poultry business may be entered. Without doubt, the price and volume declines of the depression period were the immediate causes of failure; inevitably operating resistances beyond those already experienced were bound to appear.

From the standpoint of the general problem of the status of the wholesaler it is clear that as far as the poultry business in San Francisco is concerned to date, there are only the rudiments of tendencies to eliminate the independent wholesale middlemen. The primary adaptations have been within the class of wholesale middlemen through the early gradual disappearance of produce

dealers and brokers and the strengthening of the larger wholesalers, and the recent revival of smaller wholesalers. At present, whatever tendencies there are to elimination emanate from the farmers' cooperative organizations and the meat packers and chain stores. The poultry cooperative sells directly to all who wish to buy, thus omitting the wholesalers. It is likely to expand its operations. The turkey organization so far has sold only to wholesalers and prefers to continue on this basis. Since the meat packers have been busy selling to the chain stores, there is an opportunity here for more direct selling if grocery chains push more heavily into the meat business. To date, the cooperative retail grocery organizations have made no effort to buy poultry through their central offices. One of the chain systems had planned two years ago to operate its own receiving, feeding, and dressing stations, but this project has been indefinitely postponed. Hence, it appears clear that in the near future, at least, the larger proportion of the poultry sold in San Francisco will continue to pass through the hands of the independent wholesale middlemen.

DIMINISHING RETURNS IN VIEW OF PROGRESS IN AGRICULTURAL PRODUCTION¹

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I

Although the State of Iowa was fully settled by 1890, it has since then doubled its crop production, notwithstanding a 20 per cent decline in farm population.² The increased productivity of the farm people of Iowa is, I believe, an instance of general significance for undoubtedly what has taken place in Iowa is to a degree characteristic of the development of much of the agriculture of the United States. In this paper I want to give the results of a study of Iowa crop production and as the subject indicates, to comment upon certain aspects of the phenomenon of diminishing returns. Because of the nature of the study the discussion will be restricted to its secular interpretation which is, in the opinion of many economists, the most important phase of the law of diminishing returns.³ We might ask is it reasonable to look upon agriculture as being peculiarly subject to diminishing returns in view of the greater efficiency of farm people, the technical developments in farm production and the resultant food surpluses which have for some time depressed the agriculture of the world? When we consider the changes that time has wrought in farming methods and note the increase in the area of land that has become submarginal and observe the decline that has taken place in the purchasing power of land values, do we not have to conclude that these are *prima facie* evidences of increasing instead of diminishing returns? More specifically, however, I should like to raise the question whether or not the experience of agriculture, since the appearance of the first edition of Marshall's *Principles*, which is the period covered by the crop statistics of this study, tends to invalidate the admirable and well qualified interpretation which

¹ Journal Paper No. B7 of the Iowa Agricultural Experiment Station.

² The term farm population will be used throughout this paper to distinguish it from rural population as employed by the Bureau of Census. The data upon which the following calculations are based were prepared by Harter and Stewart in *The Population of Iowa, Its Composition and Changes*, Iowa Agr. Exp. Sta. Bul. No. 275, 1930. The farm population figures include unincorporated hamlets which range from 5 to 300 or more people each. The total population of these unincorporated hamlets is somewhat over 100,000. The number of people living in such hamlets has been relatively constant. This group has not been deducted from the total farm population figure on the assumption that a large proportion of the people living in the unincorporated hamlets of Iowa are farm people, furthermore, it is estimated that the number of farm people included in the urban and village population figures approximately compensate for the non-farm people living in unincorporated hamlets.

³ Patton, Lester F. *Diminishing Returns in Agriculture*, New York, 1926. p. 67.

Marshall placed upon the classical Law of Diminishing Returns when he wrote, "Whatever may be the future developments of the arts of agriculture, a continued increase in the application of capital and labor to land must ultimately result in a diminution of the extra produce which can be attained by a given extra amount of capital and labor"⁴

Needless to say, the concept of diminishing returns has found such wide application that it has become very difficult to formulate any one general statement which is entirely satisfactory. To preserve its broad outlines and yet attain the precision needed for particular analysis is virtually impossible judging by the many refinements one finds in economic literature. Diminishing returns has had an interesting evolution since its early classical use. Take for example the fruitful distinction between technical and historical diminishing returns which Cannan had already made in his *Theories of Production and Distribution*. Later writers have carried on by increasing the number of qualifications. Fetter ascribes to diminishing returns three meanings: "(1) Technical proportion, the best mechanical or physical combination; (2) profitable proportion, the enterpriser's best combination of factors at existing prices; (3) diminishing returns, the social-economic problem of the relation of population to resources."⁵ Although the three-fold division which Fetter used is the one most commonly found, Davenport has catalogued as many as eleven different aspects of the law.⁶ But in its original form the law was essentially a historical tendency describing the "increasing difficulties encountered in enlarging the total agricultural product if there is a pressure of growing population."⁷ The law as here stated is strictly a forecast discounting all probable improvements in technical efficiency and emphasizing the increasing resistance of nature, meanwhile always assuming a growing population. It is upon this phase of the law that the data of this study have a direct bearing. But once more, the secular law should not be confused with that generalized static principle relating physical inputs to outputs where the premise assumes a point in time and a given stage of the arts.

The meaning which is commonly associated with diminishing returns comes directly from West, Malthus, and Ricardo.⁸

⁴ Marshall, *Principles*. Book IV, Chap. III, Sec. 2.

⁵ Fetter, Frank A. *Economic Principles*, New York, 1928, Vol. 1, p. 440.

⁶ Davenport, Herbert Joseph. *Value and Distribution*. Chicago, 1908. Chap. XXIII.

⁷ Ely, Richard T. *Outlines of Economics*, New York, 1930. 5th edition. Part III, Chap. XX, p. 396.

⁸ Cannan, Edwin. *A History of the Theories of Production and Distribution in English*

Marshall also insisted that it be retained as a secular prophecy, calling attention to the ultimate production limitations of agriculture, and not be used to describe the elastic notion growing out of the laws of variable proportions stressed by Carver and Bullock. "The diminishing return which arises from an ill-proportioned application of the various agents of production into a particular task has little in common with that broad tendency to the pressure of a crowded and growing population on the means of subsistence. The great Classical Law of Diminishing Return has its chief application . . . to all the chief food crops." At another point Marshall observes, "But when the older economists spoke of the Law of Diminishing Return they were looking at the problems of agriculture . . . of the nation as a whole. . . . They rightly insisted that, from a social point of view, land is not on exactly the same footing as *other agents of production*."¹⁰

II

The data given below measure the successive increases in crop production of Iowa, a fixed area. No attempt has been made to ascertain the changes in costs for not much is to be gained by probing into them. Even though they were available no amount of analysis of costs on individual farms and of the prices at which they sold their commodities would serve to illumine the problem of diminishing returns. The figures at hand are valuable in so far as they indicate the proportioning of labor and capital to land. While these statistics are at best only rough approximations of the phenomenon which they purport to measure, they are sufficiently conclusive to warrant the broad deduction that during the past forty years Iowa has enjoyed a large measure of secular increasing returns.¹¹ This conclusion holds whether we assume the law to be based on a fixed area of land or upon the developments within agriculture and industry as a whole.

By 1890 all free, virgin prairie land in Iowa was settled. In the decade that followed the farming area of the state stabilized and has since changed relatively little. The year 1900 marks the peak, both of the number of farms and of the acres of land in

Political Economy from 1776 to 1848. London, 1922. 3rd edition. Chap. V, p. 166. "But there is no doubt whatever that Ricardo, like West and Malthus, believed that the returns to agricultural industry do actually diminish in the course of history in spite of all improvements."

⁹ Marshall. *Principles*. Book V, Chap. VIII, Sec. 4.

¹⁰ *Ibid.* Book IV, Chap. III, Sec. 8. Note on the Law of Diminishing Return. Italics mine. interpretation which Knight has shown is of no consideration to economics if we assume that men know what they are doing. For any given combination of factors of production at any particular time, the diminishing stage represents the extreme limits of economic activity. If we assume divisibility of the factors of production no entrepreneur who is motivated by economic desires would stop his production before attaining the highest average physical output nor would he go beyond the highest total output. See Knight, Frank H. *Risk, Uncertainty and Profits*. New York, 1921. Chap. IV.

farms. Any increase in production that has taken place since the turn of the century cannot be ascribed to the opening of new land; all subsequent expansion must therefore be due to an adjustment in the agents of production other than the area of land. Provided that there has been no significant change in human ability, it follows that there either has been an increase in the application of labor and capital to land or there have been technical advancements in corn-hog farming. Each of these possibilities will be considered.

TABLE 1.—NUMBER OF FARMS AND ACRES OF LAND IN FARMS IN IOWA FOR CENSUS YEARS FROM 1880 TO 1930

Census Years	Number of Farms	Land in Farms		Per Cent of Total Land Area in Farms
		Acres	Per Cent of Increase	
1880	185,400	24,753,000		70
1890	201,900	30,492,000	23	86
1900	228,600	34,574,000	13	97
1910	217,000	33,931,000	-2	95
1920	213,400	33,475,000	-1	94
1925	213,500	33,281,000	-1	94
1930	214,900	34,019,000	2	96

Although the acreage of land in farms in Iowa has remained fairly constant the number of acres in crops has steadily increased. About 30 per cent more of the farm land of the state is cropped today than in 1895. When this expansion in crop land is associated with the decrease in farm population we obtain our first indication of the strides which the corn belt farmer has made in bettering his efficiency. The average farm person of Iowa handled about 21 acres of crops in 1930 in contrast with 13 acres in 1895. This represents an increase of roughly 60 per cent.

No one familiar with the shifting that has taken place among crops would consider acres of crops a very satisfactory criterion of farm production. Nor do acres alone give any weight to

TABLE 2.—IOWA CROP ACREAGE, FARM POPULATION AND AVERAGE CROP ACRES PER FARM PERSON, 1890-1930

Year	Total Crop Acreage ^a	Farm Population ^b	Average Crop Acreage per Farm Person
1890	17,446,000	1,210,000	14
1895	16,447,000	1,235,000	13
1900	18,568,000	1,261,000	15
1905	18,936,000	1,185,000	16
1910	18,542,000	1,118,000	16
1915	19,823,000	1,083,000	18
1920	20,512,000	1,053,000	19
1925	21,376,000	1,039,000	20
1930	21,589,000	1,027,000	21

^a Includes corn, oats, barley, rye, wheat, flaxseed, potatoes, alfalfa, and other hay, both tame and wild.

^b From Harter and Stewart, *The Population of Iowa, Its Composition and Changes*. Bul. No. 275, Agr. Exp. Sta., Iowa State College. 1930. These data are subject to some factors of bias, however, not sufficiently important to affect the relative position of the data.

changes in crop yields. Historically, the shift toward more intensive crops has been especially important; farmers have turned from wild hay, wheat, rye, and flaxseed to oats and particularly corn. The index appearing in Table 3 not only gives weight to

TABLE 3.—CROP PRODUCTION INDEX FOR IOWA AND THE RELATIVE CROP OUTPUT PER FARM PERSON FOR SELECTED PERIODS FROM 1890 TO 1930
(1898-1902 = 100)

Year	Crop Production Index ^a	Farm Population	Relative Pro- duction per Farm Person
1890	77	1,210,000	80
1896-1897	82	1,235,000	84
1898-1902	100	1,261,000	100
1903-1907	103	1,185,000	109
1908-1912	117	1,118,000	132
1913-1917	124	1,083,000	145
1918-1922	143	1,053,000	171
1923-1927	134	1,039,000	163
1928-1930	150	1,027,000	184

^a Includes corn, oats, barley, rye, wheat, flaxseed, potatoes, alfalfa, and other hay, both tame and wild. The index was obtained by taking the average annual production of each crop for each of the selected periods and computing relatives. The logarithms of the relatives of each crop were then weighted. The weights were ascertained by taking the average production of each crop for the thirty-four years and multiplying by the average price for the period. The total value of all crops thus computed equals 100 per cent of the weights.

crop acreage but also to the relative importance of each crop and to yields. But, even so, the index does not include a large part of the production activities of Iowa farmers. The livestock industry has become progressively more important throughout the state. To give full credit to the increased productivity of Iowa farm people one would need to include the expansion in crop acreage, the better yields, the shift to more productive crops and, in addition, the increased attention and effort given to livestock feeding, dairying, and poultry husbandry. Judging by the sources of the farm income, the processing of crops through animal utilization has gone on apace. In 1909 about 25 per cent of the farm income of Iowa was derived from hogs as compared with about 50 per cent at present. That from dairy products rose from 8 to 13 per cent, while poultry and eggs expanded from 5 to 9 per cent. If earlier periods are studied one finds that cash grain played a large part in the total income. The data below should be interpreted with the understanding that they do not offer a complete description of physical output of Iowa farmers. The actual increase in productivity has undoubtedly been much greater than the figures of crops alone appear to indicate. The increase, at that, is extraordinary, rising from 77 in 1890 to 150 in 1928-30. Meanwhile, the average relative crop production per farm person rose from 80 to 184, an increase of output during the course of forty years of 130 per cent.

Since the war the overproduction of agriculture has frequent-

ly been stressed; presumably, the supply of farm commodities has increased greatly due to better technique, particularly power farming. There is no reason for minimizing the importance of technical changes for they certainly are one of the fundamentals underlying the national and international farm problem today. But a fact that frequently escapes our attention is the technological progress that was being made prior to the war. For instance, the farmers of Iowa increased their productivity in terms of crop output per man as much and more from 1900 to 1915 as from 1915 to 1930. Although the World War had not marred the economic tranquility of that period it is likely that the pressure of increasing food supplies would soon have occurred. As it was, the price abnormalities arising from the War were instrumental in postponing the consequences. The sharp break in the purchasing power of corn and hogs that has taken place since 1920 is not fully explainable without recourse to the accumulating influence of better technique prior to the War.

III

What explanation are we to offer for the fact that the average farm person of Iowa has in the course of forty years increased his crop output about 130 per cent? Tacitly it has been assumed in the preceding discussion that the primary cause is to be found in better production technique. But we might, in view of some additional data, test the validity of this assumption. It was pointed out above that three possible adjustments either singly or in combination must be responsible for this remarkable increase in production: (1) The employment of more capital per unit of product; (2) an improvement in the ability and skill of farm people; (3) technical developments such as better methods of tilling and drainage, better varieties of seeds, better care of livestock, improved breeds, and more intelligent feeding practices. The distinction between (2) and (3) is not always clear. That they overlap at certain points appears evident. To illustrate, a better crop rotation is usually the development of the test plot or the general experience of agriculture but the successful application of such a crop rotation to an individual farm enterprise requires some additional ability on the part of the farmer. Or take hybrid seed corn which offers considerable promise to increase corn yields; while it is a notable contribution of science to agriculture its use calls for certain skill not required formerly in producing corn. In an almost endless succession of ways the sciences have contributed to the improvement of

the technique of the farm enterprise and many of these improvements have demanded a new sort of skill on the part of farm people. There is undoubtedly a qualitative distinction between (2) and (3) but it is not subject to any quantitative measurement.

Nor have improvements stopped with the internal production economy of the farm enterprise. The achievements of the test plot and the laboratory have also influenced the external production economies of agriculture. The list here, too, is long. One need only mention the control of pest and disease, inventions which have facilitated power farming, better transportation facilities, and the processing and marketing functions which were formerly a part of the farmer's job but which are now performed by some specialized agency. Some farmers give their entire time to the production of selected breeding stock while others supply for their community certain seed grains. If we take the corn-hog industry as a whole, the activities of experiment stations, county agents, and Smith-Hughes teachers are all presumably the result of a greater division of labor. Much of this progress is apart from that which has come as a result of new knowledge. There is the progressive division of labor and specialization of corn-hog production which is interrelated to the industrial process as a whole.¹²

To ascertain the amount of capital goods which Iowa farmers have employed since 1890 presents some insurmountable difficulties. How much has been expended on drainage, farm buildings, and roads? Drainage particularly has played an important part in the increase of crop production of some sections of Iowa; improvements in farm buildings and in roads have not contributed as much to crop as to livestock production. Available data indicate that there has been no significant change in the amount of capital expenditure for fertilizer and wages.

Table 4 gives the value of particular capital equipment of Iowa farmers for the six census years since and including 1890. This table includes only implements, machinery, horses, and mules. These capital items on Iowa farms are used principally in crop production. In a strict sense the actual inputs of capital doses should be computed on the basis of the depreciation of each of the several items. But if we assume that each particular kind of capital equipment tended to depreciate at approximately the same rate during each of the six census years, it follows that the rela-

¹² Young, Allyn A. *The Economic Journal*, Vol. XXXVIII, December, 1928. "Increasing Returns and Economic Progress." Presidential address before the British Association for the Advancement of Science. Economic and Statistic Section.

tive changes from one census year to another are not influenced by this procedure in calculation. The results would be the same whether we employ a given rate of depreciation for the capital value of the equipment employed or if we use the total capital values. The relatives appearing in the final column of Table 4

TABLE 4.—VALUE OF PARTICULAR EQUIPMENT EMPLOYED BY IOWA FARMERS FOR CENSUS YEARS SINCE 1890
(in dollars)

Year	Implements ^a and Machinery (000 omitted)	Horses ^a and Mules (000 omitted)	Total (000 omitted)	Adjusted ^b Total Value (000 omitted)	Value of ^c Particular Equipment per Farm Person	Relative ^d Value of Equipment per Unit of Crop Production
1890	36,700	93,900	130,600	159,200	132	100
1900	58,000	81,300	139,300	170,000	133	82
1910	95,500	185,600	281,100	264,100	236	109
1920	309,200	137,300	446,500	203,700	193	69
1925	227,300	92,900	320,200	216,000	208	78
1930	271,600	97,500	369,100	322,300	314	104

^a Taken from the reports of the Bureau of Census.

^b Adjusted by the all commodity price index prepared by the U.S.D.A., Bureau of Agr. Econ., Division of Statistical and Historical Research. Base = 1910-1914. The following indexes were employed: 1890, average of that year; 1900, March; 1910, March; 1920, December 1919; 1925, December 1924; and 1930, December 1929.

^c The total number of farm people is divided into the total adjusted value of implements, machinery, horses, and mules to obtain this figure.

^d Calculated by dividing the crop production index of Table 3 into the adjusted total value of implements, machinery, horses, and mules.

show little change in direction, that is, while the value of the equipment per farm person has increased from \$132 to \$314, the amount of capital equipment (machinery, implements, horses, and mules) used to produce a given unit of crops is about the same in 1930 as it was in 1890. In other words, the expenditure of capital goods shows about the same rate of increase as crop production.

In the main, these data permit the broad deduction that the inputs of these specified capital doses per unit of physical output did not change considerably. In four decades the number of Iowa farm people has declined by a fifth, yet they now produce twice the quantity of crops produced by the larger population of 1890. This increased productivity cannot be accounted for by a greater expenditure of capital per unit of crop production, provided drainage expenditures are not considered; certainly the farmers of today have not advanced enough in skill and expertness over their fathers to make possible this greater productivity. It would seem that the rise in the production index of Table 3 stands mainly as a measure of the technological advancements in corn belt farming and of those broad progressive influences arising from greater specialization of the interrelated community

as a whole. It is essentially a tribute to the favorable changes in the state of the arts.

IV

Do the foregoing data confute Marshall's prophecy that the developments in the arts of agriculture are destined to be less rapid than the increasing resistance of the soil? In a strict sense, perhaps, no. The statement, that regardless of the future development of the arts of agriculture *ultimately* a diminution of extra produce must result, is not invalidated by the fact that Iowa has for forty years shown a steady and rapid increase in productivity. But there is no reason for assuming that the next four decades will necessarily be different from those which we have studied. Then, how significant is the qualification that ultimately diminishing returns must result? This raises a question of interpretation; one which has caused some misunderstanding, especially among older economists, when they came to apply the principles of secular diminishing returns and secular increasing returns to agriculture and to manufactures.

If we go back to the view of older economists we find that when "they contrasted the increasing returns which they thought were characteristic of manufacturing industry taken as a whole with the diminishing returns which they thought were dominant in agriculture because of an increasingly unfavorable proportioning of labor and land,"¹³ they were making a comparison which involved two entirely different principals. As Young has so clearly said, they were disappointingly vague with respect to the origin and nature of the improvements which presumably in the case of agriculture tended to some extent to retard the operation of diminishing returns and which in manufacture secured an increasingly effective use of labor. The error of this common contrast between manufacturing and farming in which the first is held to be subject to increasing returns while the latter is said to be subject to diminishing returns was clearly pointed out by Commons in his *Distribution of Wealth* in 1895. Both principles are in the above sense secular generalizations. But they are not comparable because for the manufacturers it is assumed that the area of land may be enlarged as it is needed while for agriculture a fixed area is taken.¹⁴ One is a problem of enlarging production to meet the demand of an increasing

¹³ Young, *op. cit.* pp. 528-529.

¹⁴ Fetter, *op. cit.* pp. 440-441. "There is error here at every point. The manufacturing enterprise as it grows is assumed to enlarge the area of land, as it is needed (problem of investment in large production), whereas the farm is taken as a fixed area (problem of proportionality)."

market, a process which gives rise to certain opportunities and advantages arising from the division of labor, while in agriculture it is a problem of proportionality of labor and capital to land.

The total land area, it is assumed, is relatively unchanging and therefore the proportion of successive increments of labor and capital to land results in diminishing physical returns. But does it follow that all the inventiveness of man cannot "ultimately" hold in check this inexorable law? This aspect of the law is purely technological and applies both to agriculture and manufactures and that it admits of greater elasticity in the case of one than in the other is not easily established. While the law has economic implications it applies chiefly to the field of the technician. This particular aspect of secular diminishing returns, since Malthus, has been more strictly a problem which concerns the student of population than of economics.

From the above analysis it is possible to formulate two distinct approaches, which apply to both secular diminishing and increasing returns, namely, (1) successive increments of capital and labor invested in a given area of land, and (2) successive increments of capital and labor employed in an entire industry throughout a long period of industrial development.¹⁵ Each approach is equally applicable to agriculture and to manufactures and holds for either secular diminishing or secular increasing returns. Yet all too frequently, in agricultural literature, the conditions governing in (1) are assumed when discussing the problems of farmers and in (2) when dealing with industry. The restrictions laid down in the one, the analysis proceeding from a fixed physical unit, are much more severe than those in the second. To enjoy increasing returns from a given area of land requires a greater advance in the technique of production than would be necessary to bring about a similar increase in productivity for agriculture as a whole. Clearly the two approaches do not give the same results; a fixed area of land is a very arbitrary and exacting assumption; one which involves the proportionality of land to the other factors of production. The other assumes that all factors of production including land are variables; it takes into account not only the benefits resulting from new knowledge but also those broad improvements which have come from the greater roundaboutness with which labor has been applied. The distinction between the two is both serviceable and significant.

¹⁵ Commons, John R. *The Distribution of Wealth*, New York, 1893. p. 117.

THE BURDEN OF INCREASED COSTS OF DISTRIBUTION

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When costs of distribution increase, as for instance when freight rates are raised, who pays the bill? Does the producer receive less, or does the consumer pay more? And if they divide the burden between them, what determines how much of the load will be borne by the producer, and how much by the consumer?

The answer to this group of questions consists of two parts, for the division of the burden of increased costs of distribution between producer and consumer depends upon two sets of conditions. It depends, first, upon the slopes of the demand and supply curves; that is, upon the elasticity of the demand and of the supply. And second, it depends upon the ease with which the demand and the supply curves shift as a whole; that is, upon the shiftability of the demand and of the supply.¹

These two sets of conditions should be considered separately. Let us begin with the first set, the elasticity of the demand and of the supply.

The Slopes of the Demand and Supply Curves

It should be recognized from the first that the question concerns, not one market, but two different markets.² These markets are definitely related to each other, but they are two distinct markets with respect to place. The one is the producer's market, where the goods are sold; the other is the consumer's market where the goods are purchased.

The exposition will be clearer if it runs in terms of some specific commodity whose costs of distribution have increased. Let us use hogs as an illustration. No pure consumer's or producer's market for hogs exists, of course; but New York, the heaviest consuming state, can be used as a representative consumer's market, and Iowa, the largest hog-producing state, as a representative producer's market. There is no ambiguity in referring to an area as wide as a state as "a market," for the

¹ Leontief, Wassily, "Ein Versuch Zur Statistischen Analyse von Angebot und Nachfrage," *Weltwirtschaftliches Archiv*, July, 1929. The first part of this article deals with these concepts.

² The use of the term "market" here is restricted to the place or area aspect. Fundamentally the two markets are one and the same market; the prices in one depend directly upon the prices in the other; the two markets are hooked up "in series," separated only by the transportation and handling charges required to bridge the distance between them. But it is precisely this separation by the amount of the transportation charges that is the object of this study.

majority of the hogs in Iowa are sold locally, outright, and the local markets in Iowa are reported daily by the Bureau of Agricultural Economics as one state-wide hog market.

The shipping charges for hogs from Iowa to New York were roughly \$1.00 per hundred pounds before the War, and have increased to approximately \$2.00 per hundred since the War. The average farm price of hogs in Iowa before the War was in round numbers \$7.00 per hundred pounds.

Thus far we have been able to stick closely to the facts. The final step in outlining our problem, however, calls for one simplifying assumption that is very far from the facts. In order to carry through our reasoning in the simplest terms, we shall assume that all of our hogs are produced in Iowa and all of them are consumed in New York.³

Each one of these markets has its own pair of demand and supply schedules. The two pairs are similar; the series of quantities are the same at both markets. The only difference is that the prices in the New York schedules are all \$1.00 per hundred higher than those of the Iowa schedules. If a graph of the New York schedules were superimposed on a graph of the Iowa schedules, the New York curves would both lie \$1.00 higher in the graph than the Iowa schedules; otherwise the two pairs of curves are identical.

At each market only one schedule is a basic or primary schedule; the other is derived from the corresponding schedule at the other market. In the Iowa market, for example, the supply schedule is basic or primary. It is based directly upon the costs of raising different quantities of hogs in Iowa. It is not affected by changes in the cost of getting hogs to New York. Changes in this cost will affect the *demand* curve for hogs in Iowa, and the new demand curve will cut the Iowa supply curve at a lower point. The quantity of hogs demanded will change. But the position of the *supply* curve at the Iowa market will not be affected, for it is based on the costs of producing different quantities of hogs in Iowa, and nothing has happened to change these costs.⁴ But the demand schedule at the Iowa market is not a primary

³ After the argument has been worked through on this basis, this assumption can be removed and the reasoning applied to the more complex situation actually existing in the United States, in which hogs are produced and consumed all over the country, with intervening distances ranging from nothing to more than a thousand miles between producer and consumer. This application would not change the essential nature of the reasoning here laid down, but it lies beyond the scope of the present article.

⁴ We are speaking here of supply curves, not cost curves. A supply curve is the locus of the intersection points of different quantities of hogs with the different marginal costs of producing them. It should be clearly distinguished from a costs curve, which simply shows the costs of different producers for a given total quantity at a given instant of time, not the different marginal costs of producing different total quantities. See Marshall, *Principles*, pp. 810-812.

schedule. It is a derived schedule, derived from the demand schedule at New York, simply by deducting the cost of getting hogs from Iowa to New York from the prices at New York. It is directly and fully affected by changes in the cost of this transportation.

At New York, the demand schedule is basic or primary. It is based directly upon the desires and purchasing power of the consumers of pork located there. Changes in the cost of getting hogs from Iowa to New York do not affect the New York demand schedule, because these changes do not affect the factors on which the New York demand schedule is based. But the New York *supply* schedule is not a primary schedule. It is derived from the basic Iowa supply schedule by adding the cost of getting hogs from Iowa to New York, and is therefore directly affected by changes in that cost.

The schedules showing the pre-war and post-war situation are

TABLE 1.—SUPPLY AND DEMAND SCHEDULES

Iowa				
Demand Schedule			Supply Schedule	
Pre-war Prices ^a	Quantities ^b	Post-war Prices	Prices	Quantities
\$9	5	\$8	\$5	5
8	6	7	6	6
7	7	6	7	7
6	8	5	8	8
5	9	4	9	9

New York				
Demand Schedule		Supply Schedule		
Prices	Quantities	Pre-war Prices	Quantities	Post-war Prices
\$10	5	\$ 6	5	\$ 7
9	6	7	6	8
8	7	8	7	9
7	8	9	8	10
6	9	10	9	11

^a Prices in dollars per 100 pounds live weight.

^b Quantities in billions of pounds.

shown below in Table I, and are represented graphically in Figure 1.⁵ Equilibrium for the period before the War is reached at a

⁵ These curves have purely hypothetical slopes of -1 for the demand curves and $+1$ for the supply curves. They do not represent conditions of unit elasticity (except close to the center). They are not intended to. Such curves would be concave upwards on an arithmetic scale like the one used in the chart. But the actual demand curve for hogs (see *U.S.D.A. Yearbook*, 1930, p. 589, fig. 32, and *JOURNAL OF FARM ECONOMICS*, April, 1932, p. 246, the latter reference showing the curve for pork) is almost perfectly straight, not curved like one of constant elasticity would be.

quantity of 7 billion pounds^a and a price of \$7.00 a hundred in Iowa and \$8.00 in New York.

After the War, shipping charges increase from \$1.00 per hundred pounds to \$2.00. This has no effect upon either of the two primary schedules—the supply schedule for hogs in Iowa

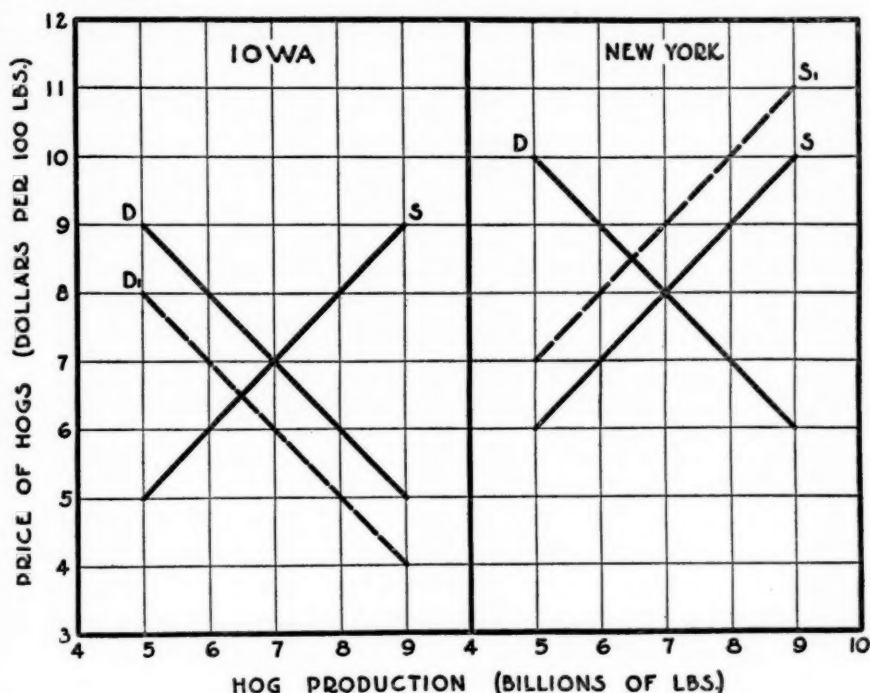


FIGURE 1.—Demand and supply curves for Iowa and New York.

D = Pre-war demand curve
 D₁ = Post-war demand curve
 S = Pre-war supply curve
 S₁ = Post-war supply curve

Pre-war shipping charge, \$1.00 per 100 lbs. Equilibrium reached at a production of 7 billion lbs., with a price of \$7.00 in Iowa and \$8.00 in New York.

Post-war shipping charge, \$2.00 per 100 lbs. Equilibrium reached at a production of 6.5 billion lbs., with a price of \$6.50 in Iowa and \$8.50 in New York.

and the demand for hogs in New York. The cost of raising different quantities of hogs remains the same in Iowa, and the series of prices that consumers will pay for different quantities in New York are unchanged.

But the derived schedules are directly affected. The supply

^a Any other figure could be used just as well here. We have used seven billion pounds simply because that was the average consumption of pork in the United States before the War.

prices for hogs in New York go up by the full amount of the increased shipping charges. It costs \$1.00 per hundred more now to deliver hogs in New York than it did before the change was made. The new supply schedule for New York is shown in the third column of the New York supply schedule. The prices in it are all \$1.00 higher than the pre-war prices.

A similar but opposite change has taken place in the demand for hogs in Iowa. Consumers at New York previously would pay \$8.00 per hundred when 7 billion pounds of pork were produced. This meant that they would pay \$7.00 per hundred—that is, \$8.00 minus \$1.00 shipping charge—in Iowa. But now shipping charges have gone up to \$2.00 per hundred; so \$2.00 instead of \$1.00 per hundred is clipped from the New York price. New York consumers now can pay only \$6.00 per hundred in Iowa for the same quantity for which they previously paid \$7.00. Similarly with the other quantities in the schedule. This is shown by the third column in the Iowa demand schedule.

If we plot these new demand and supply schedules for Iowa and for New York, we find that the equilibrium point on both markets is reached at a quantity of 6.5 billion pounds, with a price for that quantity of \$6.50 a hundred in Iowa and \$8.50 per hundred in New York. The burden of the increased middleman's charges has been divided equally between the producer and the consumer, and the production and consumption of hogs have decreased from 7 to 6.5 billion pounds.

The reason that the burden was divided equally between the producer and the consumer is that the demand and supply curves both have the same steepness of slope, namely 45 degrees. The burden would have been just as equally divided if the slope of the supply and demand curves had been some other figure, but equilibrium would have been reached at a different quantity from that just worked out. With a slope for example of $-.5$ for the demand curve and $+.5$ for the supply curve, equilibrium would be reached at 6 instead of 6.5 billion pounds.

The case is different, however, when the slopes of the demand and supply curves are unequal. Then the burden is unequally divided between the producer and consumer. This can be shown by replacing the demand schedule just employed with one of $-.5$ slope. This is roughly the slope of the actual demand curve for hogs.⁷ Under these conditions, a reduction in quantity of one billion pounds causes a rise in price of \$2.00 per hundred in-

⁷ See U.S.D.A. *Yearbook*, 1930, p. 589, fig. 32, and JOURNAL OF FARM ECONOMICS, April, 1932, p. 246.

stead of \$1.00. This situation, and the effects of an increase in shipping charges from \$1.00 to \$2.00, are shown in Table 2 and Figure 2.

The new equilibrium this time is reached not at 6.5 billion pounds but at 6.66 billion, and at a price of \$6.66 in Iowa and

TABLE 2.—SUPPLY AND DEMAND SCHEDULES

Iowa				
Demand Schedule			Supply Schedule	
Pre-war Prices ^a	Quantities ^b	Post-war Prices	Prices	Quantities
\$11	5	\$10	\$5	5
9	6	8	6	6
7	7	6	7	7
5	8	4	8	8
3	9	2	9	9

New York				
Demand Schedule		Supply Schedule		
Prices	Quantities	Pre-war Prices	Quantities	Post-war Prices
\$12	5	\$ 6	5	\$ 7
10	6	7	6	8
8	7	8	7	9
6	8	9	8	10
4	9	10	9	11

^a Prices in dollars per hundred pounds live weight.

^b Quantities in billions of pounds.

\$8.66 in New York, instead of \$6.50 and \$7.50 respectively. The production of hogs therefore has been reduced less than in the former case. More of the burden of the increased shipping charges is borne by the consumer and less by the producer.

Shifts in Primary Demand and Supply Curves

So runs the analysis in good neo-classical terms. It is developed along the lines of thought originally laid down by Alfred Marshall⁸ and T. N. Carver.⁹

But we have not yet investigated the second part of the question, the shiftability of the primary demand curve and the primary supply curve. We have shown how the derived supply and demand curves shift up and down freely, by the full amount of the increase in the costs of distribution; but thus far we have assumed that production contracts or expands readily and that the *primary* curves remain unaffected by the shifts in the positions of the derived curves.

⁸ *Principles*, Bk. V, Ch. XIII, "Theory of Changes of Normal Demand and Supply."

⁹ *Economic Journal*, Dec., 1924, pp. 576-588. "The Incidence of Costs."

This assumption must now be scrutinized. It will be found that under the conditions generally implicit and sometimes explicit in orthodox economic theory, i.e., that other things remain equal, the assumption holds. But under other conditions the assumption

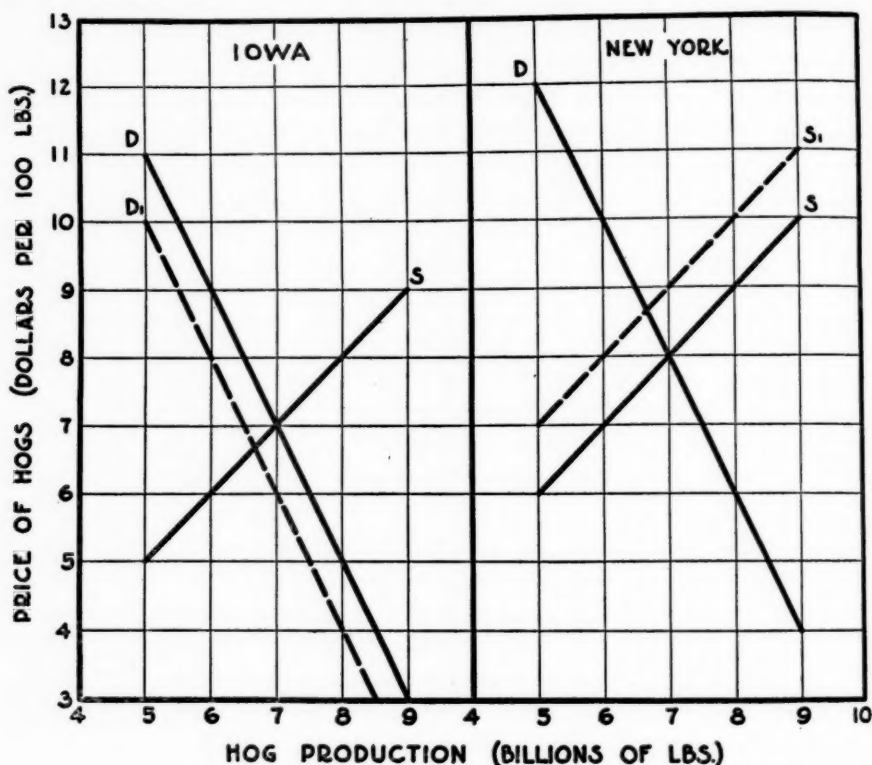


FIGURE 2.—Demand and Supply Curves for Iowa and for New York. Inelastic Demand.

D = Pre-war demand curve
 D₁ = Post-war demand curve
 S = Pre-war supply curve
 S₁ = Post-war supply curve

Pre-war shipping charge \$1.00 per 100 lbs. Equilibrium reached at a production of 7 billion lbs., with a price of \$7.00 in Iowa and \$8.00 in New York.

Post-war shipping charge \$2.00 per 100 lbs. Equilibrium reached at a production of 6.66 billion lbs., with a price of \$6.66 in Iowa and \$8.66 in New York.

is not valid; when other things do not remain equal, the primary curves shift, as well as the derived curves.

When other things remain equal, for example, when the costs of distribution of hogs increase but the costs of distribution of other farm products remain unchanged, the derived demand curve for hogs shifts downward and the price of hogs in Iowa

is depressed. The prices of other products, however, remain unchanged. Farmers therefore raise fewer hogs and more of alternative products; the production of hogs is reduced, the supply curve for hogs remaining substantially unchanged.

But when other things do not remain equal; when the costs of distribution of other agricultural products increase, as well as the costs of distribution of hogs, the situation is different. Suppose that a general freight rate increase goes in effect, for example, or that a decline in the general price level takes place and wage rates remain high while agricultural prices decline. Then the derived demand curves for all agricultural products shift downward, and farmers do not shift from hog production in other lines, because the prices of alternative products have declined as much as hog prices have. The derived demand curve for hogs in Iowa shifts downward, but farmers do not decrease their hog production as they do when other things remain equal. They maintain their production at about its previous level. But something has to give way. What happens is that farmers shift their supply curve downward as much as the demand curve has fallen. They reduce their supply prices, shifting their whole supply curve downward, instead of reducing their production.

The supply curve for hogs when a general increase in the costs of distribution occurs (affecting other agricultural products as well as hogs) is a more complex thing than the supply curve for hogs *caeteris paribus*. The situation is simple enough when the demand for hogs¹⁰ and other products is increasing, in response, let us say, to growth in human population, increase in per capita purchasing power, or a reduction in the costs of distribution. The demand curve shifts to the right and/or upwards, the price of hogs rises, and hog production goes up. These things take place without much friction. Agricultural production expands easily, as the War showed us.

But when the demand for hogs decreases, the situation is different. Farmers do not decrease their production of hogs as readily as they formerly increased it. Their investment has been made, their plant is a going concern; it cannot be shut down without loss of the time and money invested. Most of the labor is supplied by the farmer and his family, and they cannot be discharged.¹¹ They take a lower return than they anticipated, rather than take no return at all. They continue to produce, but

¹⁰ The reader should mentally insert "and other products" after the word "hogs" wherever it appears in this section, since we are dealing here with changes affecting other products as well as hogs.

¹¹ O'Brien, *G. Agricultural Economics*, pp. 10-11. London, 1929.

at lower prices than before. A new supply curve is set up. *The path marked out by the intersection points of the demand and supply curves when the demand for hogs increases is not retraced when the demand for hogs declines.*

Figure 3 represents the situation. The demand is shown as in-

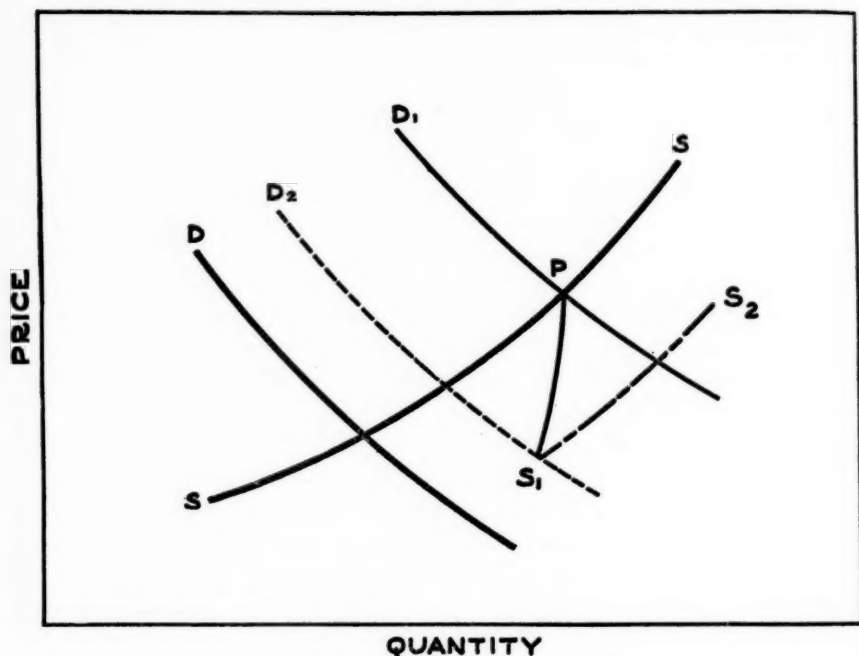


FIGURE 3.—“One-way” supply curves.

creasing from D to D_1 and then decreasing to D_2 . The curve SS is the supply curve under conditions of increasing demand. The other curve, running from P to S_1 , is the supply curve established under conditions of decreasing demand.¹²

The important thing to note is that when the demand increases again, the supply curve $S_1 P$ is not retraced. Another new supply curve results, such as is represented by $S_1 S_2$, probably with a slope similar to the old.¹³ Supply curves like these work in only one direction. They are “one-way” curves.¹⁴

The inelasticity of agricultural supply when the derived demand curve for all agricultural products is shifting downward

¹² See Slichter, *Modern Economic Society*, pp. 291-301, for an excellent treatment of this question.

¹³ On this point I differ with Slichter.

¹⁴ Diagrams of this sort really require three dimensions for adequate representation, with time measured along a line perpendicular to the other axes. The line S_1 and S_2 then would lie on a different plane from the present chart, an inch or two closer to the reader than the plane of the page.

was forcibly demonstrated during the post-war depression of 1920. After the War, agriculture felt the impact of a lower general price level and increased costs of distribution. The relative costs of distribution of pork products, for example, were much higher after the War¹⁵ than they were before it. Hog prices fell relatively lower than the general price level fell. The Chicago price of hogs divided by the index of the general level of wholesale prices rose very little during the War, but it fell heavily after it. This decrease in the value of hogs, however, did not result in any decrease in hog production. Hog slaughter has not decreased since the War; if anything it has increased. Farmers have reduced the prices in their supply schedule, instead of reducing their total production of hogs. Instead of decreasing the production, they have increased the supply.

This may seem strange to those who are familiar with the cyclic movements in hog production; for these movements indicate that in normal times the production of hogs is expanded and contracted rather easily. In normal times, however, farmers go into or out of hog production in response to price changes easily, because they can go out of or into alternative enterprises in their farms without great difficulty. But the situation after the War was not normal. The prices of all farm products fell. The purchasing power of farm products fell to 75 in 1921,¹⁶ (1910-14 being taken as 100) and remained below 90 until 1925. Farmers were reluctant to reduce their production of hogs and increase the production of some other commodity, because the prices of other commodities were just as low as the price of hogs. Farmers cut their supply prices—in most cases cutting into their own management returns—because they had no other choice in the matter.

The situation can be summed up in a few sentences. The effects of a general increase in distributive costs, or of a business depression, or of a falling general price level¹⁷ are similar.

¹⁵ Dr. G. F. Warren of Cornell and H. M. Conway, Director of Research for the National Life Stock Marketing Association, have both demonstrated this. "In the past six years, pork retailed at 72 per cent above the five-year pre-war average, but packers paid only 20 per cent above pre-war prices for hogs. . . . In the five years before the war, the packers paid 57 per cent of the retail price. If packers had paid 57 per cent of the retail price in the six years 1921 to 1926, they would have paid an average of \$13.47 instead of \$9.46. This difference has not all been kept by the packers or by any other single agency. It has been absorbed by the entire distributing system." (*Cornell University Bulletin 466*, "Interrelationships of Supply and Price," p. 75). Conway's researches lead him to similar conclusions. The situation has been rendered much more acute, of course, by the effects of the depression that has taken place since the statements quoted were written.

¹⁶ *The Agricultural Situation*, Bureau of Agricultural Economics, June, 1932, p. 15.

¹⁷ In the case of a decline in the general price level the situation is partly alleviated by the fact that some of the farmer's costs of production decline along with the decline in the selling prices of his products. But it is a notorious fact that most of the farmer's costs—interest charges, taxes, etc.—decline little if any from previous levels. The present index of the selling price of agricultural products, according to the Bureau of Agricultural Economics *Agricultural Situation* for June, 1932, stands at 56; the index of the prices of goods farmers buy stands at 112.

They all cause a downward shift in the demand schedule for agricultural products. The demand curve cuts the supply curve at a lower point. But instead of production decreasing and the burden of the change being divided between producer and consumer, the producer, having already made his commitments in his plant as a going concern, continues to produce as large quantities as before, though at a lower price level; the supply curve shifts downward and the producer bears the whole burden himself. The statistics of prices and production at the present time illustrate this point even more clearly than they did during the post-war depression. Cotton, wheat, corn, hogs, and cattle prices now are half or less than half as high as their average for the eight years 1922-29. Yet with one exception (cotton, the acreage of which has been reduced 10 per cent) the acreage of the major crops is being maintained at about previous levels; in the case of some crops indeed the acreage is being expanded; while the numbers of hogs, sheep and cattle are remaining constant or are increasing. Table 3 shows the statistics for 1932 compared with earlier years.

A situation of this sort did not have serious long-time effects while the population of the United States was expanding rapidly, as it was before the World War. The steady increase in population kept the demand curve steadily moving to the right, and before many years had passed the demand increased enough so that the situation gradually righted itself. In terms of Figure 3, the demand eventually increased until the demand curve cut the new low supply curve S_1S_2 at about the S_2 point, and prices became as high as they were before.

But the situation now is different. Immigration restrictions and declining birth rates have very greatly reduced our rate of population growth. "From these and other facts, statistical authorities conclude that a stationary population for the United States is only about 30 years distant. Assuming no changes in restrictions on immigration, an increase of about 10,000,000 is expected from 1930 to 1940, of about 7,000,000 from 1940 to 1950, and of only about 4,000,000 from 1950 to 1960. If these estimates prove correct, the population of 1960 will be only about 144,000,000 or about 20,000,000 more than at present."¹⁸

Furthermore, "The per capita demand curves of those farm crops of which corn, hay, wheat, sugar, potatoes, oats, barley, rye, and buckwheat constitute a fair sample, have either ceased

¹⁸ U.S.D.A. *Yearbook of Agriculture*, 1932, p. 37, Par. 1.

TABLE 3.—CHANGES IN U. S. CROP ACREAGES AND LIVESTOCK POPULATION

Crops ^a						
Crop	Acreage (1,000 acres)					
	5-yr. ave. 1924-1928	1931	1932	1932 Per cent of 1931		
Corn, bu.....	99,979	105,100	108,609	103.3		
All wheat, bu.....	56,131	55,299	55,414	100.2		
Oats, bu.....	41,865	39,719	41,994	105.7		
Barley, bu.....	8,991	11,428	13,895	121.6		
Hay, tons.....	55,771	53,431	52,424	98.1		

Livestock ^b						
Farm Animals	January 1, 1930		January 1, 1931		January 1, 1932	
	Per cent of previous year	Thousand head	Per cent of previous year	Thousand head	Per cent of previous year	Thousand head
Horses and Colts.....	—	13,684	96.2	13,165	96.3	12,679
Mules and Mule Colts.....	—	5,366	97.2	5,215	97.3	5,082
Cattle and Calves.....	—	59,730	102.0	60,915	102.4	62,407
Sheep and Lambs.....	—	51,383	102.7	52,745	102.2	53,912
Swine including Pigs.....	—	55,301	98.3	54,374	109.4	59,511

Sources:

^a *Crop Report as of July 1, 1932*, Bureau of Agricultural Economics, U. S. Department of Agriculture.^b *Livestock Report as of January 1, 1932*, Bureau of Agricultural Economics, U. S. Department of Agriculture.

to shift upward or have begun to shift downward"¹⁹ since the War.

That is, the total demand for agricultural products is increasing at a very much slower pace now than before the War. Probably by the time another ten or twenty years have elapsed it will have ceased to increase at all. Agriculture is losing a large part of its powers of recuperation. The burden of increased costs of distribution (mostly the result of higher freight rates and higher labor wage scales) or of a business depression, or of a falling general price level, falls chiefly on the producer now the same as it did before the War. But whereas a generation or two ago the steady increase in the demand for agricultural products helped him to roll the burden off with the passage of time, nowadays the load settles on his shoulders more permanently; he must struggle with it unaided until such time as the property is passed on to a new owner on a new value basis.

¹⁹ Schultz, Henry, "The Shifting Demand for Selected Agricultural Commodities," *JOURNAL OF FARM ECONOMICS*, April, 1932, pp. 226-7.

LOCAL LAND-UTILIZATION STUDIES IN RELATION TO PROBLEMS OF RURAL ECONOMIC ORGANIZATION

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Knowledge of land and other resources is indispensable to the wise direction of production, but such knowledge will contribute little to the efficient use of resources, so long as the economic forces that influence production are not brought under the mastery of that knowledge.

Whether farm acreage should be contracted or expanded, whether land in agricultural use should be devoted to another use, and, if so, to what use, whether private lands should be acquired for public ownership and use and, if so, for what use and by what agency—the answer to each of these and to similar problems arising in industries other than agriculture are interrelated. National land-utilization policies are a phase of industrial planning and successful industrial planning is contingent upon the development of national planning.

Proposals for national and industrial planning are examples of efforts to modify and control our economic and social organization with a view to correcting defects that become more serious in their consequences as our industrial system approaches maturity. It is obvious that proponents of these ideas recognize the necessity of progressive changes in our economic organization. Their purpose, it is apparent, is to give thought to the development of a technique of adjustment in our economic processes and, by means of social experimentation, to devise methods of utilizing this technique of adjustment to maintain a balanced economic organization. The special object of this paper is to consider the scope and purpose of the type of local land-utilization study which has as its central problem the determination of an appropriate pattern of rural economic organization for an established and organized local population group.

Many of the forces which affect the comparative advantage of utilizing land for one purpose or another are national and even international in their scope. This fact suggests that the land-utilization problems of a neighborhood, a community, a county, a state, or a region can not be understood in their causal relations, much less solved, by studies of conditions and tendencies in a limited geographic area. From some points of view the significance of this limitation increases as the geographic unit

of study decreases. But from other points of view this is not the case. Each region, community, and neighborhood has broadly distinctive characteristics, implied in the fact that in some significant respects it is an entity. Sometimes it is chiefly the physical features of the land that give to a region its name—the Great Plains, the Southern Appalachian Highlands, etc. But the underlying physical features of the land and climatic conditions often so color the economic and social history of population groups that regional names have a cultural, rather than merely a geographical, connotation. Thus New England or the Old Dominion much more definitely suggest centers of significant cultural developments in American history than merely geographic subdivisions of the country. If, therefore, it is our purpose to fix attention upon those elements of a situation which are indigenous to that situation, elements which essentially constitute its *raison d'être*, it probably would be more nearly correct to say that the significance of the operation of broad economic forces decreases as the geographic unit of study decreases.

A characteristic common to the economic organization of most population groups that are confronted with serious problems of land utilization is a relative lack of responsiveness to those forces which condition the organization of a competitive society. The problems confronting many such groups are chiefly explained by the fact that the operation of competitive economic forces has not served to bring about adjustments that are consistent with the interests of the group as conceived by itself. The significance of this fact can not be escaped. In terms of the competitive economic system, the condition of survival is adjustment based on competitive efficiency. By this test, many of these local groups would necessarily be classed as economically submarginal. On the other hand, few groups will be found willing to accept that judgment as sound. Their standards of judgment are based on values and ends that are not shaped by the standards of a strictly competitive régime. Here in a very practical field emerges what Knight has termed "the central practical problem of economic theory, which is that of evaluating competitive individualism as a system of social organization, in comparison with a system based upon conscious, intelligent cooperation and on moral motives in place of the mechanical interaction of self-seeking activities."¹ The student of local land-

¹ Knight, Frank H., "Economic Psychology and the Value Problem," *Quarterly Journal of Economics*, Vol. XXXIX, No. 3, p. 405.

utilization problems soon finds that the application of competitive economic standards to these local situations leads him to conclusions that may be academically interesting, but that are at best of dubious practical value. The economics of competitive individualism yield more or less irrelevant answers to the problems presented, because it involves recourse to principles implicit in the system which creates and perpetuates the problems that require solution.

The student of land utilization in relation to rural economic organization must realize that his problem often lies, in large part, outside of the field of competitive economic adjustments. His first task must be to comprehend the economic and social aims and ends of the local group as conceived by it. To assume that those aims and ends can be valid only to the extent that they are consistent with cultural patterns embodying the principles of competitive economic individualism is to pre-judge the issue that is at the center of the whole problem. "There is no reason for looking to any field of action or achievement to justify action or achievement in any other field; each one may and certainly does define its own values and provide its own ends, though in relation amounting to unity with all the others."² Recognizing that "the form of organization also goes far to determine what is to be wanted, and to mold the attitudes of persons toward their work and toward each other,"³ the student of problems of rural economic organization must, in the second place, approach the problems of adjustment, not on the basis of objectives which lie outside of the thought and purposes of the group, but on the theory that the "function of economic organization is to utilize the limited resources at the command of the social group in bringing about the largest possible satisfaction of the wants of its members."⁴

It may well happen, in fact it is likely to prove true more often than not, that the verdict reached by applying the principles of economic individualism and competitive efficiency to the solution of local land-utilization problems will be the equivalent of a death sentence for the social group immediately concerned. That is a solution which may fit very well into the competitive economic scheme, and the solution may point to objectives which appear good, when "good" is interpreted in terms of the identical principles employed to define the objectives. The nice case thus

² Knight, Frank H., *loc. cit.*, p. 396.

³ *Ibid.*, p. 406.

⁴ *Ibid.*, p. 406.

built up manages neatly to beg the whole question and is least convincing to the local group, whose right it is, as is more commonly coming to be recognized, to be convinced. It is true, as Knight has observed in the article already quoted, that "thoughtful opinion has been tending to place less and less emphasis on efficiency in achieving objectives taken for granted, and to give increasing recognition and weight to this other question of the type of objective generated and the general philosophy of life inculcated in people" (p. 406).

These general considerations serve to show that the scope and purpose of local land-utilization studies are very much a matter of the point of view with which local problems are approached.⁵ This is true because the point of view will determine the criteria to be applied, and the criteria applied will determine the judgments that are reached.

Starting from the premise that the competitive individualistic economic régime embodies an efficient and desirable form of economic organization, adaptable to all conditions, the student of local problems of economic organization inevitably sets up as his criteria of judgment those principles which condition successful organization of the competitive individualistic type, assumed to be efficient and desirable (or, at least, inevitable). The scope of the inquiry, when problems of a local group are approached from this point of view, often cannot be delimited by, or defined in terms of, the values which the group itself conceives to be important and significant. The values which the student employs in his analysis are those implicit in a particular (although dominant) type of economic organization, and may be (and usually are) destructive in their application to the social group that is the ostensible object of study. In point of fact, the actual object of study is the economic organization that is implicit in the principles employed. The questions asked relate to adjustments (changes in or even total annihilation of) the economic and social organization of this local group that are necessary to the utilization of its resources at comparative advantage. The problem exists because resources are not utilized at comparative advantage. "If land always at once found the uses at

⁵This idea is developed by Walton H. Hamilton in an article entitled "Agricultural Research in a Changing Order" (JOURNAL OF FARM ECONOMICS, Vol. VIII, No. 1, Jan. 1926, pp. 56-62). In commenting on Hamilton's article, Claude L. Benner pertinently observed: "We must remember that in all discussions of controlling agricultural development or of formulating agricultural policies there are two paths open to us. One is to accept the market price *in toto* and to work within its limitations. The other is to deny the validity and sacredness of this price system and attempt, when it is necessary, to alter it" (*loc. cit.*, p. 65). See also, Spann's *History of Economics*, p. 62.

which it has comparative advantage, there would be no need for any land utilization studies." Maladjustments in land utilization exist "because the utilizers of it do not know enough about its natural qualities, about the regions with which it must compete for a market, and about the nature of the demand for the various products to which it might be devoted; because they fail to foresee the changes that will take place in competition and demand; and because of the time it takes to shift to a new use even after it is recognized as needed."

The point of view expressed in this quotation raises no critical questions as to the relative merit of the competitive type of economic organization based on production for profit and regional competition for markets, and a possible alternative form adapted to local conditions. It does not envisage the possibility of a successful alternative form of local economic organization, evoked from principles at variance with competitive economic adjustments, and pointed to objectives which express values implicit in the life of the local group. Approached from the point of view of competitive economics, local land-utilization studies have as their scope to ascertain the extent of maladjustment (that is, the extent to which major uses of land and choice of enterprises fail to conform to the principles of specialization and comparative advantage) in the local area, and the purpose is to establish a basis for readjustment (that is, changes in the major uses of land and in choice of enterprises) consistent with the application of the principles of specialization and comparative advantage to the local area. In short, the scope, method, and purpose of the study are delimited by the principles underlying the economics of production as these take effect when price competition is the means, maximum net profit is the measure, and production for a market is the mode of economic achievement.

But local land-utilization studies may proceed from different premises. The point of view may be that the economic organization of society along individualistic, competitive lines in itself gives rise to problems and that the situations developed often can not be met by relying on principles applicable to the mode of organization which created the problem. This point of view develops an approach to local land-utilization studies differing in important respects from the approach just discussed. The former approach assumes that the difficulty lies in failure of the

* Black, John D. (editor), *Research in Agricultural Land Utilization: Scope and Method*. Prepared under the direction of the Advisory Committee on Social and Economic Research in Agriculture, Social Science Research Council, 1931, p. 68.

local group to adjust its economic organization to the general economic organization. Corrective adjustments are to be made principally through changes in the organization of the local group. The present approach assumes as its center of interest the economic pattern of the local group and considers primarily the extent to which an effective economic pattern for the local group is contingent upon adjustments in external conditions and circumstances which adversely affect the local group. The point of reference for internal adjustments is the economic pattern of the local group, not the general economic pattern. To the extent that the economic pattern adapted to the effective utilization of the resources available to the local group is not consistent with the general economic pattern, interpreted in terms of the principles of specialization and comparative advantage, adjustments in external conditions and circumstances become the subject of inquiry. The importance of maintaining forms of economic organization adapted to the life of the farm, the hamlet, the village, and the town may be wholly obscured by the false notion that the unrestrained operation of forces generated by a particular, and by no means perfect, type of economic organization may be relied upon to produce satisfactory results, provided only that the adjustments to these forces are carried to their full and logical effect.

To utilize principles applicable to one type of economic organization as a basis for planning adjustments for a different type of economic organization, amounts, in reality, to evaluating the latter in terms of the former. Rejection of this procedure, does not preclude the application of economic principles to the development of effective local economic organization. But it does involve an application of the principles from a different point of view. Instead of taking as the point of departure the existing economic organization, and as the mode of adjustment to it changes that are disruptive of the lives of individuals and families and destructive of cultural groups, the point of departure is the cultural group and the mode of adjustment is to effect such modifications of the pattern of its internal economy and such changes in those external conditions and circumstances which impinge upon it and affect it adversely as will contribute most to its stability, security, and advancement.

The characteristic differences in the two lines of approach are reflected in the statement that "studies in the economics of production have thus far been either devoted to a narrow entrepreneurial analysis or broadened into a national or cosmopoli-

tan point of view. They have not commonly taken the form of attempting to formulate a definite economic pattern adapted to the conditions and requirements of a particular area of limited scope." The logical significance of this statement is not that it provides a basis of differentiating two fields of analysis, the economics of production and land utilization, the one from the other. The significant implication of the statement is that the entrepreneurial analysis (which, under the theories of specialization and comparative advantage as these take effect in our present pecuniary economic régime, necessarily rest on a national or cosmopolitan point of view) is narrow when the problem is "to formulate a definite economic pattern adapted to the conditions and requirements of a particular area of limited scope." It is difficult, therefore, to follow the argument that "if the economic pattern of an area as a whole is under critical consideration, the project belongs to the general field of economics of production. On the other hand, if attention is centered on the use of the land and its incidental relationship to the general economic pattern, the project may be assigned to the subfield of land utilization." In local land-utilization studies the cultural pattern as a whole is always and necessarily the center of interest. Particular factors or conditions are important or incidental, depending on their place as elements in the cultural situation of the particular area. A local land-utilization study emerges, therefore, not where the use of land can be considered in its incidental relationships to the general economic pattern, but where the conditions are such that that relationship is of central importance.

The place of local land-utilization studies within the general field of economics of production is adequately defined by recognizing the central importance of that relationship as an object of study. When the economic pattern of an area as a whole is under critical consideration, as in a local land-utilization study, this fact does not remove the project from the subfield of land-utilization. The fact that adjustments in the use of land occupy a central place in the problem sufficiently defines the character of the project. The approach does not turn on the question as to whether the economic pattern of an area as a whole is or is not under consideration, but on the question as to values and ends to be accepted as the basis for working out a solution. Nourse has correctly stated the case: "For, admitting that certain great natural forces underlie our economic activities, these

¹ *Ibid.*, p. 8.

forces work themselves out in our economic life only through institutions which are wholly of human origin and which may be altered whenever we find them working badly or failing to achieve purposes which we have definitely espoused. . . . It may appear after careful study and some experimentation that . . . the world is a unit somewhat too large to produce the best results if economic planning be directed not merely toward profits on capital and entrepreneurship but toward laying the soundest possible national foundations for a democratic civilization."⁸

That studies directed to the solution of problems of local groups must take as their point of departure the special characteristics of the group organization has been recognized by numerous students of rural problems. Although the special significance of land as a basis of rural organization has been recognized,⁹ it is only in recent years that local land-utilization studies, designed to relate the use of land to problems of local organization and institutional adjustments, have been developed. Studies of rural organization, unless purely descriptive, must consider the ends, interests, needs which various modes of organization, arrangements, methods, and processes are designed to serve; the interrelationships of various internal and external elements of the organizational scheme; the group value of the ends or objectives served, the effectiveness of the agencies or means for achieving these ends or objectives, and the internal and external adjustments essential to a more effective plan of organization for the local group. Constructive studies of local organizational problems, that is to say, are necessarily concerned, implicitly, with values and ends in relation to which modes of organization may be appraised. The economic organization of a local group is a means to the achievement of ends. But the economic organization can not be interpreted apart from other institutional features of the life of the local group, nor can the ends of economic endeavor be postulated without regard to their cultural implications and effects.

Studies of local organization must, therefore, be concerned not only with economic phenomena and relationships, but with interrelationships involving physical, social, and political phenomena as well. Problems of economic organization are of cen-

⁸ Nourse, E. G., "Some Economic Factors in an American Agricultural Policy," *JOURNAL OF FARM ECONOMICS*, Vol. VII, No. 1, Jan., 1925, pp. 2, 11.

⁹ In 1915 Galpin wrote: "A view of the rural problem as one more problem of democracy has led to this study of the underlying relationship of the civic cluster and its land basis, of the shop population and the surrounding trading farming population." (*The Social Anatomy of an Agricultural Community*, Wis. Agr. Exp. Sta., Res. Bul. 34, p. 33.) Galpin's pioneering work in this field has been followed by that of other students of rural problems, including, among others, Kolb, Karl C. Taylor, Zimmerman, Yoder, Kirkpatrick, Melvin, and Wakeley.

tral importance because economic institutions provide the essential basis for the cultural development of local groups. The economic approach rests on the conviction that the indigenous cultural characteristics of local groups are traceable largely to characteristics of the economic environment and that the first step necessary to preserve or to create a wholesome local culture is to preserve or to create conditions which permit a suitable type of local economic organization. Far from permitting only casual reference to other aspects of rural organization, this approach necessarily involves careful consideration of the bearing of the existing type of economic organization, and of possible adjustments in it, on the whole pattern of local organization.

Need for a New Basis of Rural Economic Organization

Contrasts between capitalism and agrarianism—between modern urban and rural economy—are of many kinds, and every phase of American life has been profoundly affected by the divergent influences of these contrasting cultures.¹⁰ Economic and social forces, operating principally through improved facilities of transportation and communication, have cut across the old established lines of interest, setting up new types of activity, undermining old and creating new habits of thought to conform to changes in the orientation of activities, and creating the need for adjustment in the institutional apparatus through which new economic and social alignments must take effect. The city is the focal point from which these new forces radiate. It is inevitable that economic and social alignments should tend to run parallel with these lines of force. The result has been the disintegration of the agrarian economy that took shape on the frontier, with its economic center on the isolated farm, its social center in the rural church and school, and its political center in the county-seat town. Nothing is gained by ignoring or discounting this paramount fact. The development of these new alignments is an inevitable consequence of modern rural-urban relationships. Therein lies the problem. Between the disintegration of the old rural order and the integration of the new, there intervenes the task of reshaping important portions of our institutional fabric, for the reason that, on the one hand, the old rural order can not exist unchanged alongside the modern urban order and, on the other hand, the institutional basis of the needed adjust-

¹⁰ Numerous students have explored the field opened by Turner's epoch-making work on the significance of the frontier. The interpretive study by Parrington (*Main Currents in American Thought*) and the semi-popular, but competent, treatment of the general theme by James Truslow Adams (*The Epic of America*) trace the cultural effects of these divergent influences.

ments is not provided by superimposing urban economic and social patterns on rural groups.

There are two important sources of bias in dealing with rural problems. In the first place, as Adams (*loc. cit.*) has observed, we are apt to rationalize and idealize the sort of life that is imposed upon us. This tendency probably accounts for much wasted sentimentality in regard to the preservation of the rural milieu associated with earlier and simpler economic conditions. On the other hand, as Adams has also observed, dominant economic and social groups exercise an influence on the life and outlook of any society that is almost immeasurable. The effect of this influence is to give to the operation of certain dominant economic tendencies associated with modern industrial organization a universality of application by no means inherent in them. The principles deducible from the dominant economic régime have the vogue and prestige that emerge from that alliance. It is an easy inference, therefore, that the solution of rural problems, created by the impact of industrialism, is to be found by adjustments of rural organization to the pattern established in urban centers. Rural groups will form into clusters of satellites, each revolving about its appropriate urban sun. The appropriate objection to this concept is not sentimental concern for the preservation of contemporary rural life. The real objection is found in conditions that grow out of the fact that agriculture is the essential industrial basis of rural life. As long as the extensive margin occupies its present important place in agricultural production, spatial relationships, as well as organic characteristics of local communities, will perpetuate essentially agrarian groups whose problems are not amenable to solution by the method of merging of the rural with the urban world or by superimposing the latter upon the former.

The havoc wrought in rural areas by industrial competition and commercial exploitation has been exhibited in numerous studies. The land-basis of rural life has attracted increased attention in recent years to the relation of land utilization to problems of rural economic organization. Melvin found in a recent study that "the occupations of the people on the land have had a close connection with the changes in communication, with the growth and decline of industry and business in the hamlets and villages, and with the shifting in sex and age composition of the population."¹¹ The recognition of these interrelationships has

¹¹ Melvin, Bruce L., *The Sociology of a Village and the Surrounding Territory*, Cornell Univ. Agr. Exp. Sta., Bul. 523, May, 1931, p. 106.

led students of local land-utilization problems to regard the community as of central importance in the study of the economic pattern of a local group.¹² For the time has come in America when account must be taken of the economic and social consequences of the type of progress achieved through the process of preemption and exploitation. Less and less confidence is inspired by the dictum that the population of communities undermined and destroyed by ruthless and wasteful exploitation of their natural resources will take root in more progressive and prosperous communities elsewhere; that men deprived of one occupation will be more effectively employed in another. While American economic and social life was in its expansive and fluid state there was no immediate need to consider the impoverishment and ruin which the march of progress left in its course. But gradually there has been an awakening to the fact that the rich resources of a continent are, after all, appropriable; that wealth adequate for all can be sequestered and controlled by a few; that nations, like individuals, may squander their patrimony. Many of our rural areas today exhibit the economic and social debris of the exploitative period of the seventies and eighties in American history.

Rural Depopulation.—The movement of population from the rural areas of New England to supply hands for the textile mills and settlers for the western prairie lands, although an adjustment to economic forces and conditions, created, it is probably fair to say, more problems than it solved. These problems have become more, rather than less, acute with the passage of time. There is no longer any justification for making a bow to that economic platitude so often uttered to the effect that economic forces will, if given time, bring about desired readjustment between population and natural resources. The truth is that economic forces, under actual conditions, do not bring about readjustments that might be desired (a) in terms of the theoretical organization or production postulated by the principles of specialization and comparative advantage, (b) in terms of the ethical organization of production postulated by groups and interests subordinate to the dominant régime.

Writing on the subject of rural depopulation, Carver stated in 1927 that "so far as a strictly economic analysis throws any light on the problem, there is no convincing reason to expect any

¹² Eke, Paul A., "The Community as a Factor in Classifying Land for Agricultural and Forestry Utilization in the West Virginia Appalachians," *JOURNAL OF FARM ECONOMICS*, Vol. XI, No. 3, pp. 412-421; also, Clayton, C. F. and Nicholls, W. D., *Land Utilization in Laurel County, Ky.*, U. S. Dept. of Agr. Tech. Bul. 289, 1932.

reversal of the process of rural depopulation."¹³ In addition to other consequences of this process of rural depopulation to be stated below, it has been held¹⁴ to contribute to rural and urban inequality by reason of the transfer which is involved of property rights from rural to urban communities.

Tax Delinquency.—In seventeen northern Wisconsin counties, containing 11,358,030 acres of land, or nearly a third of the area of the state, the rapid depletion of the forests has created extensive tax delinquency. A study of the situation in these counties led to the conclusion in 1928 that "from the standpoint of both agriculture and forestry it is evident that the policy of letting things take care of themselves is not working out well, and not likely to improve. A half-century of the policy of letting every man do as he pleases has left the northern third of the state with less than a quarter of the total area in improved farm land and saw timber."¹⁵ In a subsequent study of conditions in Lincoln County, Wisconsin,¹⁶ it was found that one-fourth of the land area sold for taxes in 1927 (p. 7), that delinquent taxes in the county have increased over 600 per cent since 1919 (p. 15), and that the financial affairs of the towns and the county were beginning to be seriously affected (p. 21). Who professes to find these adjustments, effected over an extended period of time, desirable?

Farm Abandonment.—The studies in northern Wisconsin just alluded to found extensive farm abandonment in districts having high tax delinquency. In Vinton County, Ohio, where tax delinquency is assuming serious proportions, it was found that "the land now tax delinquent is not being used for agricultural purposes and quite often never has been cultivated."¹⁷ The process of abandonment of land in farms in a highly urbanized territory is traced in a recent study of abandoned farm areas in New York.¹⁸

Forest Destruction.—Conditions similar to those in northern Wisconsin are found also in northern Michigan. It is chiefly the destruction of the forests that has created critical economic and social problems in the northern portion of these states. In an

¹³ Carver, T. N., "Rural Depopulation," JOURNAL OF FARM ECONOMICS, Vol. IX, No. 1, p. 5. The present movement to the country, due to the current depression, does not necessarily controvert Carver's statement as a characterization of a process.

¹⁴ Rutledge, R. M., "The Relation of the Flow of Population to the Problem of Rural and Urban Economic Inequality," JOURNAL OF FARM ECONOMICS, Vol. XII, No. 3, pp. 427-439.

¹⁵ Hibbard, B. H., Swenchart, John, Hartman, W. A., and Allin, B. W., *Tax Delinquency in Northern Wisconsin*, Wisc. Agr. Exp. Sta., Bul. 399, 1928, p. 10.

¹⁶ Hibbard, B. H., Hartman, W. A., and Sparhawk, W. N., *Use and Taxation of Land in Lincoln County, Wisconsin*, Wisc. Agr. Exp. Sta. Bul. 406, 1929.

¹⁷ Sitterley, J. H., Moore, H. R., and Falconer, J. I., *Land Utilization in a Southeastern Ohio County*, Ohio Agr. Exp. Sta. Bul. 485, 1931, p. 29.

¹⁸ Vaughan, Lawrence M., *Abandoned Farm Areas in New York*, Cornell Agr. Exp. Sta. Bul. 490, 1929.

excellent study published in 1929, Sparhawk and Brush,¹⁹ list the following effects of forest destruction in northern Michigan: vanishing resources and waning industries, loss of employment for settlers, loss of revenue and needed supplies from farm woods, loss of nearby markets, reduction of railroad revenues and curtailment of service, high road taxes and poor highway facilities, an increased burden of taxation, higher rates of interest, reduced per capita wealth, and inadequate social and educational facilities and services. The assumption has been—an assumption derived from the experience of the frontier period—that deforested land should be settled and farmed. Indeed, the equanimity with which the American people accepted the ruthless destruction of the forests, may be attributed, in large part, to the notion that the land was needed for farms and homesteads. Unfortunately, after most native American farmers had learned that a settler on a northern cut-over farm could not expect the harvest reaped by the descendants of the pioneers who settled the prairies, it was still possible to colonize cut-over lands by exploiting various elements of the foreign-born population. Associated with forest destruction, there have emerged, therefore, some serious problems connected with colonization,²⁰ the regulation of land-settlement activities,²¹ and the rehabilitation of the forests.²²

Problems associated with the denudation of forested lands and with attempts to colonize and utilize for agriculture cut-over lands unsuited to that use are of great importance in the field of land utilization. Local land-utilization studies may often contribute to a solution of these problems, although in many instances they do not directly involve question of the preservation or improvement of the economic organization of local population groups. The special approach and objectives which are the subject of this paper are chiefly applicable when the permanent use of land by an established and organized local group is the central problem involved. For the fact of central importance in local studies of this type is that they postulate as the unit of study an established population group; as the object of the study, the present preservation of that group on terms which will permit normal, evolutionary development and adjustment of its culture-pattern; as the measure of capacity of the population group

¹⁹ Sparhawk, William N. and Brush, Warren D., *The Economic Aspects of Forest Destruction in Northern Wisconsin*. U. S. Dept. of Agr. Tech. Bul. 92, 1929.

²⁰ Hartman, W. A. and Black, John D., *Economic Aspects of Land Settlement in the Cut-over Region of the Great Lakes States*. U. S. Dept. of Agr. Cir. 160, 1931.

²¹ Hartman, W. A., "State Policies in Regulating Land Settlement Activities," *JOURNAL OF FARM ECONOMICS*, Vol. XIII, No. 2, April, 1931, pp. 259-269.

²² Sparhawk and Brush, *loc. cit.*

to survive, the stability of its culture-pattern *after* good roads, good schools, hospitals, and an economic organization adapted to the effective utilization of its resources have been provided; as the means of achieving the object of the study, internal adjustments to correct defects arising from locally controllable conditions and external adjustments to correct defects arising from conditions beyond local control.

This conception of the method and purpose of this type of local land-utilization study points to a new basis of rural economic organization. If modern civilization is ever to rise above the level established by regarding the efficient exploitation of men and materials as the ultimate object of our economic system, apparently the beginning must be made by taking account of the interrelation of the economic means, methods, and processes utilized by a population group to obtain its livelihood and the cultural characteristics of that group. To subject an entire social organization to the shaping and determining influence of economic forces whether operating mechanically or administered by dominant groups, is to exalt the economic process above the process of civilization.

Probably the chief contribution of the modern industrial process to the ends of civilized life, notwithstanding its standardizing tendencies, is the diversity of human aptitudes and talents for which it provides a medium of expression or a means of utilization. But in this the modern economic régime, like the royal and aristocratic patrons of the arts and letters of an earlier day, abates none of its prerogatives with the bestowal of its patronage. It is true that many individuals whose aptitudes and talents unfit them for the environment created by machine processes and business methods are able to engage in professional pursuits that permit a measure of escape from immediate physical and intellectual subjection to the discipline of the factory or office. But for a considerable number in any large population, these avenues of escape provided by the patronage which industry and business bestow on the professionally trained or the talented, are not open. A good many of them were among those who fled to the frontier when the industrial revolution broke upon this country; others remained in the back country when rural areas were drained of population to provide labor for the factories; still others never moved beyond the mountains along the margin of our first frontier.

Our Congested Frontier.—There is, in short, an element of our population that has resisted absorption into a highly com-

plex, competitive economic régime. Pressed on by the successive waves of the pioneer advance, elements of this group drifted with its backwash when the frontier closed, to settle in places touched only by eddies from the main stream of developments. Others found lodgment and remained in the hills, forming simple communities, long untroubled by the prevailing notion that progress meant "bigger" and that "bigger" meant "better." Still others clung to barren soils, perpetuating decadent communities, while neighbors were bludgeoned or beguiled from their homes by nearby factories or distant farms. Communities thus formed or perpetuated present problems of economic organization that come within the special scope and purpose of local land-utilization studies. These communities lie close to the extensive margin of agriculture. Much of the land under cultivation is often stated to be submarginal for agriculture. Realistically, the concept of competitive margins is a frail tool of analysis, if the aim be to gain insight into the forces which motivate the economic behavior of these recalcitrant groups and to arrive at methods of economic adjustment which do not affront their biological and social heritage. These communities are not necessarily vestigial survivals. Many of them must be regarded as variants in contemporary life having characteristics from which emerge special problems of adaptation and adjustment. These problems can be solved only by recognizing these communities as culturally variant groups and by regarding them as lacunae in the general economic structure.

Between communities in eastern Kentucky and the hill towns of Vermont, there is, among others, this interesting difference. In the former region very little farm abandonment has occurred, while in the latter the record of farm abandonment is notorious. But in both cases the scanty resources, particularly the edaphic limitations of the land, tend to result in pressure of population, whether the number of inhabitants be large or small. This poverty of economic opportunities in relation to population forms the subject of a note by T. N. Carver under the title of "Our Congested Frontier."²³ Although the evil consequences of agricultural expansion by dry-farming and by irrigation is the principal point dealt with in this note, the broader implications of the subject are recognized by Carver who suggests that the combined policy of reforestation and repasturation, recommended for certain arid lands in agricultural use, "might well be extended to all large areas of marginal and submarginal land where farmers

²³ JOURNAL OF FARM ECONOMICS, Vol. XI, No. 2, Part 1, pp. 335-338.

are trying to eke out a miserable existence on land that is too poor to yield a good living" (p. 338). As is often the case, the procedure here suggested to solve one economic problem unhappily creates another in the process of applying the cure. To illustrate, a policy of reforestation of large areas, simply because they are submarginal for farming, raises some serious questions as to the economic feasibility of forest use, as Sparhawk²⁴ has pointed out. Moreover, the assumption that the people occupying these "submarginal" agricultural areas would be "better off" elsewhere, or that the nation would be better off to have them elsewhere, is gratuitous.

The psychic cost of a relatively isolated and skimpy existence to the man who elects it may, on good economic grounds, be regarded as something less than that which he conceives to be involved in any available alternative method of obtaining a living. And as to the national economic aspects of the matter, the per capita overhead cost to the nation of the scanty institutional apparatus provided for laggard groups is small compared with the per capita cost of national subsidies provided to save industry's permanent army of unemployed from starvation and to lift commercial agriculture from the disasters incurred (it is said) by producing too large a quantity of foodstuffs. This country can better afford, from an economic as well as from a cultural standpoint, as an alternative to increasing such subsidies, to establish and maintain in areas occupied by essentially self-contained and indigenous population groups, all the public utilities, services, facilities, and other external aids essential to a high standard of living. If, under the fermenting influence of good schools (including facilities for adult education), good roads, and expanded cultural contacts, the group disintegrates and the population disperses, the problem is happily solved at a social cost that need not be regarded as large compared with results achieved. On the other hand, under these conditions the group may demonstrate that its stability rests on factors which mere isolation and ignorance serve inadequately to explain—on qualities immanent in the group and its environment.

A sound policy with respect to rural organization must recognize that variant social groups are a normal feature of a highly complex economic organization. It is essential to recognize that adjustments in local economic organizations can not properly be based on the distorted rural-urban relationships and the ab-

²⁴ Sparhawk, W. N., "Problems in Determining the Economic Feasibility of Forest Use," *JOURNAL OF FARM ECONOMICS*, Vol. XI, No. 3, pp. 402-411.

normal local situations and conditions that are a consequence of the underprivileged status of rural groups. The theory that it is the responsibility of local groups to provide and maintain essential local public agencies, services, and facilities has been modified by provisions for various types of state aid to enable local groups to maintain minimum educational facilities, for the construction of roads, etc. But the theory persists to limit or defeat the essential purposes to be served by adequate extension to the country of public facilities and services. The primary purpose is to permit stable groupings of the population between city, town, and country, between urban and rural employments, and the establishment of normal alignments and relationships between these groups. There can be no satisfactory basis for a choice between the country and the city as a place to live and work as long as the country is treated as a national poor house.²⁵ Both the location and internal organization of rural groups and the relation of these groups to urban groups are also profoundly affected by the contrast in the public facilities available in the city and in the country.

Once this primary obstacle to normal alignments between urban and rural groups and to geographic localization of population is removed, a basis is provided for planning rural economic organization along lines established by groupings based on genuine differences of interest, aptitude, and capacity of the population. It is possible, for example, that a great many people now in cities would much prefer life in a simple mountain community. It is equally probable that some people now in poor and isolated mountain communities have aptitudes that fit them for city life. It is no solution to open the channels of communication merely better to reveal the inadequacy of the cultural facilities of the country. Normal adjustments can be effected only by eliminating this type of rural-urban inequality. The task of rural economic planning is to devise types of local economic organization adapted to the effective utilization of the resources of the local groups that emerge from equality of cultural competition between city and country, and to procure such modifications of our general institutional scheme as may be necessary to provide a place for variant groups in the general economic structure. It is for the performance of that task that the local land-utilization study can be most effectively employed.

²⁵ Carver states in the article on Rural Depopulation, referred to above, that to increase the attractiveness of life in the country or the country village, "the federal and State governments would be justified in going to almost any length to initiate programs of school, road, and hospital construction" p. 10.

NOTES

THE INFLUENCE OF SPANISH AND MEXICAN LAND GRANTS ON CALIFORNIA AGRICULTURE

When California became a territorial possession of the United States in 1848 it had already experienced nearly eighty years of agricultural development as a Spanish province and as a part of Mexico. As a result, an agriculture, the essential feature of which was cattle ranching, had become firmly established. This situation grew out of the settlement by a people and under a governmental land policy quite different from that which influenced development in most other parts of this country. This policy was essentially one of granting tracts of thousands of acres of unused lands to citizens who were willing to settle upon them.

The treaty which ceded California to the United States also provided that land titles which were valid under Mexican rule should be recognized by the new government. These claims were quite numerous, 813 eventually being presented for confirmation. The evidences of their validity were in many cases most uncertain. This furnished an opportunity for many fraudulent claims, which further complicated the situation. The process of investigating these claims, surveying them, and issuing patents to the owners extended over about thirty years. It is the prevailing opinion among historical writers that the necessary litigation worked undue hardships upon the claimants and that the resulting uncertainty over ownership was a serious obstacle to the state's agricultural progress.

Of the 813 claims presented 618 were finally confirmed. They included an area of over eight million acres or an average of nearly fourteen thousand acres each. These grants were located in the southern two-thirds of the coastal area of the state. This section between the great interior valley and the ocean is quite mountainous, with numerous valleys of varying sizes. These valleys constitute the agricultural area of this, the earliest settled portion of the state, and were almost entirely included in land grants.

Because the policy toward land settlement in any country is necessarily an important influence in its development, the results under this system may be expected to differ substantially from those of the colonization plans followed in most parts of this country. The opinion is widespread that the influence has been a retarding of progress, even beyond that occasioned by the uncertainty over titles, by the Spanish ranchers insisting upon maintaining their large holdings when they were desired for grain farming and other more intensive uses. In view of this fact the agricultural history of the areas included in some of these land grants has been studied in an attempt to trace the Spanish influences through the various stages of development leading to the present agriculture. A transition has taken place from cattle grazing on ranches of thousands of acres through periods of grain farming and other field crop production to a situation in which the best agricultural lands are for the most part in orchard, vineyard, or truck crop farms of fifty acres or less, many of them even under twenty acres.

For this study four counties were chosen, each important, though quite different agriculturally, and each having its agricultural area largely taken up by land grants. Within these counties the grants of over ten thousand acres which were in present farming areas, were selected for individual study. There were thirty-seven such grants. From the county surveyor's and assessor's maps the subdivisions of these grants were traced in detail. This was related to the agricultural development as revealed by a study of historical literature and personal interviews with old residents and other

informed persons. Finally the present agriculture was studied by means of a field survey.

The relationships between early concentration of ownership and subsequent development were found to be somewhat different for each of the counties studied, and yet certain generalizations seemed to hold for all. These probably can be applied with a reasonable degree of assurance to the other counties of the state.

In one county, Contra Costa, the Spanish cattle ranchos of the central valley area were practically all broken up and sold to incoming grain farmers during a period of about twenty years beginning shortly after California became a state in 1850. In this way ownership was quickly disseminated, and there is little if anything in the later orchard and vineyard development that can be directly related to the early large holdings.

A nearby county, Sacramento, presents a rather striking contrast to the situation described above. Spanish settlement was later, and cattle ranching less important. The land was not as productive for grain farming and so most of the grants passed into the hands of Americans not as grain farms but as very large holdings. When orchard and vineyard production began to develop in this part of the state and opportunity was presented for real estate agencies to purchase large tracts of land, subdivide them, provide irrigation, and sell the resulting lots as small fruit farms. A wide margin usually existed between their per acre purchase and sale price. Under this stimulus the colonization business thrived, numerous sales being made by highly promotional methods to settlers who for the most part knew nothing of the agriculture of this region. The result was the establishment of a system of farming which, while successful in many cases, was decidedly unsuccessful in many others. The capital outlay was large, and many of the farmers are still engaged in a type of production which would be abandoned immediately were it not for the invested capital. This whole situation relates to early concentration of ownership through the fact that large tracts of land were maintained intact so that they could be purchased readily by these promotional agencies.

In a third county, Monterey, after a long period of cattle ranching, the grants were turned into grain farms. Holdings, however, tended to remain large, the new settlers usually leasing the lands. Sales were made gradually, the lands eventually passing out of the possession of the original Spanish families.

In a fourth county, Ventura, most of the grants were sold intact by their Spanish owners following a severe drouth which deprived them of their stock. The purchasers were interested in oil rights and in the great agricultural possibilities. The new owners actively promoted settlement and agricultural development as a means of realizing upon their investments. In this way concentration of ownership here served as a stimulus to agricultural progress.

It was found to be almost universally true that the Spanish land holders did not use their lands for anything other than grazing. However, contrary to a prevalent opinion, they readily leased or sold whenever the demands for more intensive uses made it possible for them to add to their immediate returns by so doing. The rate of subdivision corresponded very closely with the land value. The poorer areas which remained longer in large holdings were often taken up by real estate agencies for colonization purposes. The better areas offered less opportunity for such activities. Little or no tendency toward further subdivision of present large holdings is evidenced.

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PROBLEMS IN USING COUNTY RECORDS IN FARM MORTGAGE RESEARCH

Because of a few glaring deficiencies in mortgage records in county court houses, investigators in farm credit, for the most part, have made little use of the extensive files of these records. Although the obstacles are indeed significant, it is nevertheless possible to overcome them, at least to a considerable degree, thus making possible the use of this valuable material. Evidence in support of the statement that these obstacles can be surmounted is provided by a recently completed study of 26,000 farm mortgages recorded during the years 1854-1931 in Story County, Iowa.

Doubt as to the value of the material, particularly for a study covering a period of time, can scarcely exist in the face of the fact that no other source of comparable mortgage records is accessible. Moreover, the information is a matter of public record, hence readily available. Then, too, because of the nature of mortgage transactions, data on such points as interest rates, liens, amounts, names, and locations of lenders can be obtained more accurately by this method than by any other.

Such an array of advantages would appear sufficient to bring about widespread use of mortgage records in agricultural credit research. Indeed, that would undoubtedly be the case were it not for at least two especially troublesome difficulties encountered in interpreting this type of data. The first obstacle is the problem of mortgage releases, the second, the matter of partial payments.

Unfortunately the formal release of a farm mortgage at the county court house on a certain day does not mean that the mortgage note is paid on that day. It may happen, and often does, that the mortgage note is paid anywhere from a month to three years or more before. Lenders are seemingly in no hurry to release a mortgage after the note is paid. Of course if the borrower demands a release, it is generally forthcoming. Furthermore, if a mortgage is negotiated by a new lender, a release will be called for in order to clear up the title to the land. There are so many cases, however, where there is no call for a release and, further, where the lender does not take the initiative in filing it, that the records are not to be relied on for the payment date of mortgages.

Another source of error in connection with releases arises, in periods of depression particularly, when a first mortgage is foreclosed which automatically cancels one or more junior mortgages outstanding. In Iowa no indication of this cancellation appears on the junior mortgages, the only clue being the foreclosure record. A similar situation exists in the case of assignments. The deed of land to the holder of a mortgage quite naturally removes the mortgage debt from the standpoint of its economic significance. Unless the borrower demands it, however, no release of the mortgage involved appears in the records. After the assignment, the mortgage may remain unreleased in the court house for an indefinite period, possibly for several years unless a new mortgage is executed which calls for a clear title evidenced by an abstract brought up-to-date.

The result of these deficiencies in the releasing of mortgages is an exaggeration of the outstanding mortgage debt. If a correction is not made, the figures for debt in force will include a considerable amount outstanding, as far as the records are concerned, which actually has been paid.

To meet this situation it is advisable to employ the simple expedient of bringing together all mortgages covering the same tract of land, regardless of the time at which the mortgages were executed. By this means, mortgage renewals are quickly detected, and the date of mortgage payment determined by the date of the new mortgage. In addition, with a list of foreclosures and assignments of land both arranged according to description of real estate, the mortgages automatically can-

celled can be ascertained and properly released. The only cases left unaccounted for, then, are those mortgages which have been paid but which remain unreleased on the county books and at the same time are not involved in renewal transactions or in default.

The second obstacle, the more difficult of the two to surmount, is the lack of information on partial payments. To get an accurate index of mortgage debt some consideration has to be given to the reduction in principal made on outstanding mortgages. In the case of federal and joint stock land bank loans, reduction in principal can be calculated readily with information on original amounts, and interest rates as given in the mortgages. But these loans make up only a small per cent of the total, the majority do not call for regular payments on principal, allowing instead for optional payments by the borrower.

In making allowance for optional payments the first proposition to consider is the fact that there is a tendency for such payments to increase with prosperous conditions and to decrease with adversity. This will be verified by the renewal loans. In prosperous times renewal loans are often for greatly reduced amounts provided no improvement or land purchase money enters into the transactions. In periods of depression on the contrary, renewal loans will tend to be for the same amount as the previous loans, because of the inability of the borrower to make payments on the principal.

From the consideration of renewal mortgages, it is evident that there is available a constant check on partial payments. By analyzing the renewal loans from month to month and from year to year, an indication of the payments being made on the principal can be obtained. Further, another clue is often provided where loans are extended. In these cases the record of the extension may specify the outstanding principal amount extended. In Iowa with loans running for short periods, five years generally, renewals and extensions furnish an excellent means of detecting the extent of partial payments.

Errors arising from inadequate information on releases and partial payments, it appears, operate in the same direction, that is, to overstate the amount of farm mortgage debt in force. On the other hand, there are two compensatory factors, that, in the last analysis, may be considered as balancing in a rough way the effect of the releases and partial payments. The first of these is the amount of mortgage debt outstanding but unrecorded. This debt may include mortgages in the process of being negotiated and it may include mortgages held by parties who will not record the instruments unless some adverse event occurs making it necessary to protect the lien. It is reasonable to suppose that mortgages of this kind would be more prevalent in periods when farm incomes are relatively high than at any other time, thus offsetting releases and partial payments in these periods. The second factor is the piling up of delinquent interest, taxes, and other debts during times of depression. There is a considerable lag between the time these obligations originate and their later transfer into a mortgage lien either in a renewal loan or in a junior mortgage. In effect, therefore, these obligations represent outstanding debt against the land, a perfectly valid offset item to partial payments and unrecorded releases during the depression periods.

It would be worth while to have more study of the extent to which such gaps in mortgage data as have been discussed can be bridged by methods similar to those suggested. Success in this direction will mean a short cut to the establishment of current indices of the farm mortgage situation.

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MARKETING VIRGINIA FARM FLOCK EGGS ON A GRADED BASIS

Of the several thousand agencies marketing eggs in Virginia, only ten are paying the producers on the basis of definite grades. Two of the latter agencies are operated on a strictly private basis for the profit of the owners. The remainder operate on a semi-cooperative basis. All ten agencies are using the United States grades for eggs.

The movement in Virginia for marketing eggs on the basis of the U. S. grades was sponsored by the late Nelson A. Laucks, standardization specialist of the State Division of Markets. The failure of a centralized type of state-wide egg marketing organization in 1924 gave cooperative marketing of eggs a black eye in most parts of Virginia. Mr. Laucks therefore started to develop the cooperative marketing of eggs on a community basis, building around a semi-cooperative egg grading station wherever the producers and a feed dealer or other local agency were willing to co-operate in developing an improved method of marketing eggs.

The first semi-cooperative federal-state grading station was opened in Kilmarnock on the Chesapeake Bay in the fall of 1930. The decline in the market for fish and sea food led the people in this territory to look for other sources of income. Under the leadership of their progressive county agent, Carter Chase, they turned to poultry as offering one of the best means of securing satisfactory returns for their labor. By the fall of 1930 the production of eggs in the territory had developed to the point where it was necessary to expand the outlets available to the poultrymen because the local marketing agencies would not handle the eggs at prices in line with the cost of getting the eggs to market. After an educational campaign a committee of producers was appointed and it negotiated an agreement with the Farmers' Feed Service to handle the marketing of the producer's eggs on a graded basis for the following charges per dozen:

Grading	1 c
Cases, fillers and flats	1½c
Overhead and selling	2 c
<hr/>	
Local handling costs	3½c
Transportation (at cost)	2 c
<hr/>	
Total marketing cost	5½c

The operator of the grading station has to make a contract with the State Division of Markets for federal-state grading service. He is required to charge the egg producers one cent per dozen for the grading service until the volume amounts to 200 cases per week. Above this figure the grading charge drops as the volume increases, and for 500 cases per week or more the charge is one-half cent per dozen. The State Division of Markets stations one of its graders at the grading station and pays his salary weekly. The station operator is required to remit to the Division of Markets the money received from the producers for the grading service. If this sum is not equal to the minimum salary of the grader, amounting to \$15 per week, the station operator is required to make up the balance from his own funds. In return he is permitted to use the grader in his other business when the grader is not busy grading eggs. The station operator is required to sell the eggs and return to the producer the proceeds for the various grades of eggs, less only the handling costs agreed upon by the committee representing the producer.

The Kilmarnock grading station has grown slowly and most of the time has been able to make better returns to the producers than they could secure locally.

Hucksters from Washington frequently have bid up the price above the returns secured through the grading station in an attempt to secure a volume of eggs. The majority of the patrons of the station have remained loyal because they realize the service being rendered by the station. The volume handled through the Kilmarnock grading station has been averaging more than 100 cases per week, and occasionally in the spring period of flush production has amounted to as much as 300 cases.

The success of the Kilmarnock station stimulated interest in this type of egg marketing on the part of the Virginia Seed Service, which is the cooperative wholesale purchasing organization serving the farmers of the state. The Virginia Seed Service urged the local cooperatives affiliated with it and its dealer agencies to undertake the operation of egg-grading stations for their patrons. By the spring of 1932 there were thirteen federal-state grading stations operating in the central and eastern portion of the state. Unfortunately, most of these stations were opened before a survey had been made to determine whether the producers were interested in the service. As a result, the lack of interest and the failure to educate the producers regarding the advantages of selling eggs on grade, forced three of the stations to close in the early summer of 1932.

The station operators have experienced considerable difficulty in securing outlets in New York and other markets that would pay satisfactory prices and enable the stations to return to the patrons as high prices as the hucksters offer. To assist in developing markets, they formed an organization and appointed a selling committee. This committee has done good work and has been successful in securing a more favorable basis of pricing the eggs than the individual operators were able to secure. They have experienced considerable difficulty in satisfying the better class of trade on account of the relatively uneven quality of the eggs at the time of their arrival on the central market. In conjunction with the State Poultry Federation and the Extension Division of the state college, the egg-grading stations are carrying on educational work to induce the patrons to adopt uniform production practices and methods of handling their eggs, in order that the stations will have a uniform product which will enable them to turn out a uniform pack of graded eggs.

The station operators have been the principal backers of this program of marketing graded eggs in the various communities. They have seen in this movement an opportunity to help the producers in their territory improve the outlet for their eggs, and at the same time, an opportunity to expand their volume of feed sales. They have, therefore, cut down their charge for overhead in many cases and at times have charged the producers nothing for handling the eggs, in order that the price received by the producers would compare favorable with the local market price. Some of the operators are now charging only one cent per dozen for overhead and selling. Many of them have lost several hundred dollars on their egg operations, but hope to make this money up later when the price relationship between the local market and the central market may be more favorable.

As a general rule the producer's committee has not functioned after making the original agreement regarding handling charges. In no instance has the grading station operator rendered any report of the financial standing of the egg-grading operations, although the producers were given to understand at the time of the organization of the grading station that as volume increased and handling costs were reduced the charges to them would be correspondingly reduced. This combination of circumstances has resulted in the great majority of producers losing sight of the semi-cooperative nature of the undertaking, and has led them to regard it as a private business undertaking of the station operator.

To cope with this situation and improve the outlets for these graded eggs, a

committee representing the more progressive producers, the State Poultry Federation, and the Extension Division of the State Agricultural College, in the spring of 1932 formulated a plan for converting these grading stations to a strictly cooperative basis with an effective sales agency to expand the outlets for the graded eggs. After considerable study it was decided that the centralized type of marketing organization would be the best type to recommend, because it would give the necessary control over the marketing of the eggs. The problem of uniformity of grading is handled by the State Division of Markets through its control of the licensed graders in the different stations. The development of permanent outlets for the eggs is very important because up to the present time the station operators have been shopping around and selling their eggs wherever the highest price was offered. This shifting around has made it impossible to develop a reputation among any set of retail buyers for the graded eggs handled by the grading station.

It has so far been impossible to arouse much interest in this centralized type of organization among the small producers who constitute the vast majority of the patrons of the grading stations. The egg enterprise on their farms is not of sufficient importance for them to devote very much time to the development of the cooperative organization. It has therefore been decided to follow a slow process of community education to interest the farmers in a community or county egg and poultry marketing association. The main stress will be placed upon the improvement of quality and the development of uniform production and handling methods in order that a uniform product may be delivered to the central markets through an efficient cooperative marketing agency.

The present plan is to have these community and county associations contract for marketing service with the egg-grading station operator, who will sell the eggs through the marketing committee of the egg station operator's organization, known as the Virginia Poultry Products Association. When the volume handled by the various local associations has been built up to the point where it will be sufficient to support a cooperative central selling agency efforts will be made to form such a cooperative marketing organization.

The egg grading stations have been able to render their greatest service to producers with flocks of less than 500 birds. Owners of flocks larger than this are able to ship to market two or three times a week. When they grade out the small eggs and ship a standard weight case of eggs the quality is generally more uniform than the quality of the eggs graded out by the station from those delivered by various small producers. The central market jobbers generally pay better prices for these uncandled, farm-graded eggs than for the candled, station-graded eggs on account of the lack of uniformity in the grading-station eggs when they arrive at the central market. The irregular quality of the station eggs comes from the mingling of eggs from numerous flocks which are handled in different ways and this results in varying rates of deterioration. This difficulty can be overcome in time through education of the producers to adopt standard practices.

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CHANGES IN FARM TENANCY DURING FIFTY YEARS

The agricultural census of 1880 presented the first comprehensive view of the extent of farm tenancy in the United States. At that time 25.6 per cent of all farms were reported as operated by tenants. While there may have been slight variations in the interpretation of the term "tenant-operated farm" in the sev-

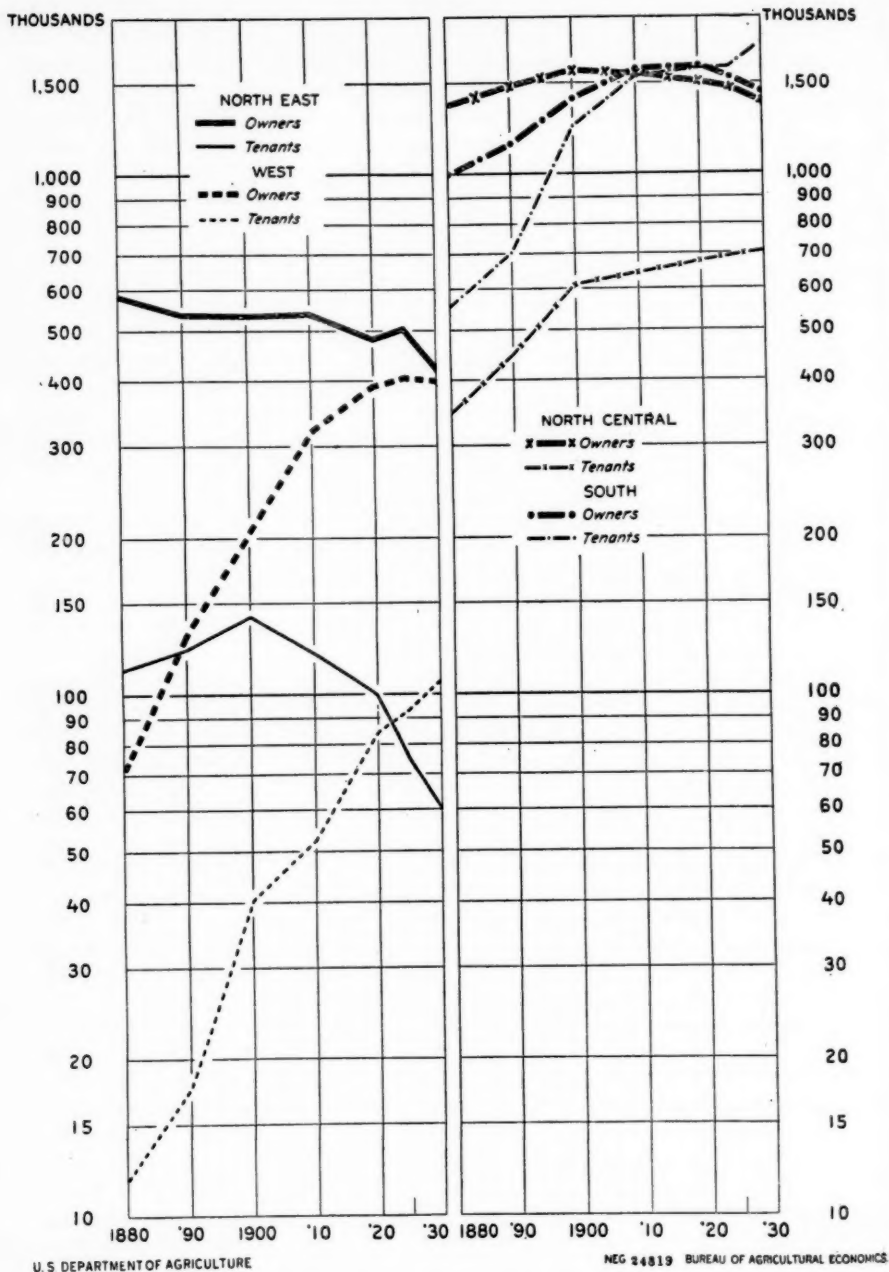


FIGURE 1. Number of owners and tenants in the United States, 1880-1930.

For purposes of comparison the changes are shown in four divisions: Northeast, including, besides New England, the Middle Atlantic States; South, including the South Atlantic and South Central States; Central, including the North Central States; and West, including the Mountain and Pacific States.

eral census enumerations, the general picture presented by the census data is accurate, and this note is intended to give only a broad view. Since the first classification placed owners, part-owners and managers in one group, "owners" as used in this note includes the part-owners and the managers for comparisons with all tenants as a second group. The number of managers is so small as to have practically no effect on the percentage figures.

For the United States as a whole the outstanding features are:

1. A period of rapid increase in the number of tenant farmers as compared with the number of owner farmers, especially from 1890 to 1900.

2. A period of fairly stable relationship between owner and tenant numbers from 1900 to 1925.

3. A period of decrease in the number of owners and of increase in number of tenants from 1925 to 1930.

Both periods of large increases in tenancy have also been periods of business depression. While the rate of increase in tenancy was less rapid after the depression of the '90's than earlier, increases in tenancy were shown at each succeeding census enumeration, and in 1930 tenant-operated farms reached the highest proportion, 42.4 per cent.

A careful analysis of census material and all other pertinent data is necessary in order to make a correct appraisal of the forces that have been operating in different parts of the country to bring about the existing conditions, but the trends are easily seen in Figure 1.

The Northeast, in which the number of tenants is small, is the only division showing a decrease in number (and proportion) of tenants. In the West, ownership has apparently reached the peak, while tenancy is rapidly increasing. In the Central States, owners have been decreasing for the last 20 years, and tenants have been increasing. In the South, tenants have outnumbered owners since 1920.

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CORRECT ACCOUNTING PRINCIPLES IN CONNECTION WITH THE PAYMENT OF CONSTRUCTION COSTS ON FEDERAL IRRIGATION PROJECTS

Valuating land on federal irrigation projects has a peculiar aspect because the government has advanced the money for constructing the irrigation works and land owners are required to repay this cost in equal or unequal annual payments, but this indebtedness carries no interest charge. The fact that no interest is charged on the unpaid construction cost also raises a question in regard to the nature of the annual payments. Do correct accounting principles require that the annual payment be handled as an investment or as an expense, or should it be handled in some other way?

If interest were charged on the unpaid portion of the cost, the matter could be handled like any other debt. The unpaid balance due the government could be added to the purchase and sale value of the land to determine the total value, annual payments on the original debt due the government could be considered the same as the payment of the principal on any other debt, and the interest charge would be an expense. Since no interest is charged, however, it would seem that for most purposes correct accounting principle requires that unpaid balances and the annual payments be discounted to their current value on the basis of some accepted interest rate in order to determine the proper amounts to enter into the account.

TABLE 1.—AN ACCOUNT RELATING TO THE IRRIGATION WORKS CONSTRUCTION COST ON THE RIO GRANDE FEDERAL IRRIGATION PROJECT WHEN FUTURE VALUES HAVE BEEN DISCOUNTED TO PRESENT VALUES AT 7 PER CENT COMPOUND INTEREST^a

Dec. 31	1	2	3	4	5	6	7	8	9
	Unpaid construction cost before annual payment	Current value of unpaid construction cost when discounted at 7% ^b	Construction charges paid	Current value of construction charges paid when discounted at 7% ^c	Cumulative current value of construction charges paid	Theoretic selling value of land before annual payment	Total value Column 2 plus Column 6	Part of construction charge that should be considered an expense, (\$3.60 minus amt. given in Column 4.)	Interest on current value of unpaid construction cost less \$3.60 at 7% ^d
1924	\$90.00	\$44.89	\$3.60	\$.71	\$.71	\$100.00	\$144.89	\$2.89	\$2.89
1925	86.40	44.18	3.60	.76	1.47	100.71	144.89	2.84	2.84
1926	82.80	43.42	3.60	.81	2.28	101.47	144.89	2.79	2.79
1927	79.20	42.61	3.60	.87	3.15	102.28	144.89	2.73	2.73
1928	75.60	41.74	3.60	.93	4.08	103.15	144.89	2.67	2.67
1929	72.00	40.81	3.60	1.00	5.08	104.08	144.89	2.60	2.60
1930	68.40	39.81	3.60	1.06	6.14	105.08	144.89	2.54	2.54
1931	64.80	38.75	3.60	1.14	7.28	106.14	144.89	2.46	2.46
1932	61.20	37.61	3.60	1.22	8.50	107.28	144.89	2.38	2.38
1933	57.60	36.39	3.60	1.30	9.80	108.50	144.89	2.30	2.30
1934	54.00	35.09	3.60	1.40	11.20	109.80	144.89	2.20	2.20
1935	50.40	33.69	3.60	1.49	12.69	111.20	144.89	2.11	2.11
1936	46.80	32.20	3.60	1.60	14.29	112.69	144.89	2.00	2.00
1937	43.20	30.60	3.60	1.71	16.00	114.29	144.89	1.89	1.89
1938	39.60	28.89	3.60	1.83	17.83	116.00	144.89	1.77	1.77
1939	36.00	27.06	3.60	1.96	19.79	117.83	144.89	1.64	1.64
1940	32.40	25.10	3.60	2.10	21.89	119.79	144.89	1.50	1.50
1941	28.80	23.00	3.60	2.24	24.13	121.89	144.89	1.36	1.36
1942	25.20	20.76	3.60	2.40	26.53	124.13	144.89	1.20	1.20
1943	21.60	18.36	3.60	2.57	29.10	126.53	144.89	1.03	1.03
1944	18.00	15.79	3.60	2.75	31.85	129.10	144.89	.85	.85
1945	14.40	13.04	3.60	2.94	34.79	131.85	144.89	.66	.66
1946	10.80	10.10	3.60	3.14	37.93	134.79	144.89	.46	.46
1947	7.20	6.96	3.60	3.36	41.29	137.93	144.89	.24	.24
1948	3.60	3.60	3.60	3.60	44.89	141.29	144.89	.00	.00
1948*						144.89	144.89		

* Construction payments on a considerable portion of the project began in 1922 and the first four payments were for \$1.80 each, but to simplify the presentation an annual payment of \$3.60 was assumed beginning with 1924.

^b Determined from Table VIII. Present value of annuity of 1 per period. Formula: $\left(\frac{a}{n} \text{ at } i\right) = \frac{1 - (1+i)^{-n}}{i}$ Mathematics of Investments by W. L. Hart, Appendix, p. 64. The number of payments less one represents n . All amounts were multiplied by 3.60 and then \$3.60 was added because one payment was due at time of valuation.

^c Determined from Table VI. Present value of 1. Formula: $v^n = (1+i)^{-n}$ Mathematics of Investments by W. L. Hart, Appendix, p. 44. Number of payments still to be made after current payment represented by n , and all amounts were multiplied by \$3.60.

^d Deducting \$3.60 from current value of unpaid construction cost as given in Column 2 gives the value immediately after the annual payment.

* After annual payment was made.

It does not appear that this practice is very generally followed. Farm economists frequently do not take into consideration the unpaid construction costs when determining land valuations and the annual payments are sometimes considered as an investment and sometimes they are considered as an expense. Income tax regulations require that annual payments be considered as an investment rather than as an expense, while farmers are inclined to consider their annual payments an expense the same as they do the payment of their state and county taxes.

A practical illustration of converting unpaid balances and annual payments to their current values is given in Table 1. This table represents approximately the situation on the Rio Grande Federal Irrigation Project, which is located in southern New Mexico and southwestern Texas. The farmers contracted to pay the government an amount which will probably total \$90 an acre to cover the cost of constructing the irrigation works and the first payment on a considerable portion of the land was made at the close of the calendar year 1922. The first four annual payments were for \$1.80 each and according to present arrangements the balance is due in annual payments of \$3.60 each. To simplify matters, however, it has been assumed that the first payment was made in December, 1924, and that the annual payments were \$3.60 from the first.¹

For the most part, the table is self-explanatory. The 7 per cent interest used to discount future values represents approximately the average value of credit on the project. In Column 4, notice should be taken of the fact that when the construction cost payment is made for any one year, the total current value of the unpaid cost is reduced by the current value of the most distant payment to be made. When the payment is made at the close of 1924, you eliminate the payment due in twenty-four years, so in order to find the current value of that payment the \$3.60 is discounted for a period of twenty-four years. The following year the amount is discounted for twenty-three years, and so on to 0 years for the last payment. The amounts shown in Column 4 are the theoretical amounts that should be added to the sale value of the land each year because of the payment made on the construction cost. In Column 6, a selling value of \$100 per acre immediately before the first construction payment was paid, was arbitrarily assumed, and this amount was increased from year to year by the amount of the current value of the construction charges paid.

Column 8 gives the portion of the annual construction payment that should be included as an expense. It represents the difference between the \$3.60 paid and the current value of that amount as given in Column 4. If we take the year 1924 for instance, a payment of \$3.60 increases the theoretic selling value of the land \$0.71 so the \$2.89 remaining can be correctly accounted for only as a current expense.

Column 9 shows another method of arriving at the same figures. It is interest figured at 7 per cent on the current value of the unpaid construction cost as given in Column 2 less \$3.60. The reason for subtracting \$3.60 from the amount given in Column 2 is to secure the current value immediately after making the annual payment, so that the amount given represents interest paid in advance on the following year's valuation. Either method is correct in determining the amount that should be charged as a current expense in carrying the land because of the unpaid construction cost.

It may make it more easily understood to simply think of it as though there were due the government a certain amount bearing 7 per cent interest which is

¹ A recent act of Congress, postponing the construction payment for 1932 and one-half of the payment for 1933, but charging interest on this amount at the rate of 5 per cent, will alter the discounted values slightly, but no account has been taken of this postponement in the table.

to be paid according to the amortization plan. Column 4 gives the amount paid on the principal each year while Column 9 gives the interest payment.

It is not to be expected that in various cost studies, farm organization and management studies, individual accounting, and valuating for other purposes, that entirely uniform methods will be used. The proper method of valuating, and the handling of such charges will depend somewhat on the purpose for which the figures are to be used. It would seem, however, that more careful consideration to the nature of irrigation construction costs and payments would result in using figures that would at least meet the requirements of good accounting practices. The present income tax regulation that does not permit including any portion of the construction payment as an expense, does not meet these requirements.

It may also be well to call attention to the fact that if, because of the payments on construction cost, the actual selling value of the land tends to increase by the amounts shown in Column 5, and it is probable that this is approximately true even though it is not to be expected that the adjustment is made with the same exactness shown in the table, then the only persons who have benefited by the government not charging interest are those who were land owners at the time that the irrigation works were constructed. Present land owners who bought the land at a later period are receiving little benefit because the difference between the actual and discounted value of the construction cost was added to the purchase price of the land when it was secured.² The interest on the additional purchase price of the land plus interest on the current value of unpaid construction cost as shown in Column 9 will equal interest on the full amount of the unpaid construction cost shown in Column 1.³

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SOME PROBLEMS IN STUDYING FARM EXPENSES

A true picture of the economic position of the farmer can not be obtained without information regarding farm expenditures as well as income. Many studies dealing with the income of farmers have been made. Studies of expenses of farmers have received less attention. It is the purpose of this note to point out some problems which one encounters in studying this phase of the problem.

Some of the information concerning farmers' cash expenditures is incomplete. That which is available comes from a variety of sources and for this reason many problems arise in the assemblage of the expenses of farming. All the items of expenditures should be studied, provided reliable data can be secured. The data for certain items are more accurate than for others and for this reason greater care is required in employing the data from less reliable sources. Estimates for doubtful items should be conservative if included in the total expenditures. It may be better to omit an item entirely than to include it if the source of the data is unreliable. The same sources of information should be used from year to year, unless other sources become more reliable, in order that the results may be comparable. If an item is omitted, such omission should be indicated for the information of those who may wish to use the estimates.

² In case any reduction were made by the government in the amount of the annual payment, it would modify this statement since such a reduction would benefit the land owner at the time that the change was made by the amount that it would reduce the current value of the unpaid construction cost.

³ It was because of the convenience in presenting certain facts that we arbitrarily assumed a selling value of \$100 in 1924 as a starting point. Land values are determined largely by their earning power and the interest rate at which the earnings are capitalized. If we accept 7 per cent as the interest rate, the earnings capitalized at 7 per cent should give the total value of the land as shown in Column 7, and the sale value is determined by subtracting from this amount the current value of the unpaid construction cost as given in Column 2.
be used in the application of state-wide data of this character to local conditions.

Studies of cash expenditures of farming like those of incomes are usually based on some political unit as a state or a county. If the data for certain items are not readily available by counties, estimates based on less accurate data than those available for the state as a whole have to be made. A case in point is that of insurance on personal property and buildings. In Minnesota, a statement of insurance cost paid by farmers is obtainable from state reports only and the allocation of this expense among the individual counties is difficult. Other items are reported on a similar basis. When presented on a state-wide basis, the data may not be representative for a county or locality and for this reason may be subject to some misinterpretation. Caution should be used in the application of state-wide data of this character to local conditions.

Certain information may be available from more than one source. For example, an estimate of the amount of taxes paid by farmers in the State of Minnesota can be made from data in the 1930 census report. Out of 97,878 farm owners in the state, 93.6 per cent reported the total amount of taxes paid by them as being \$13,241,883. This averaged \$.94 per acre. If we assume that the same rate would apply to all land in the state, the amount of taxes paid by all farmers in 1929 would be \$29,058,565. This is \$8,200,000 less than the taxes paid by farmers on real estate and personal property as compiled from reports in the State Tax Commission Office for the same year. If special assessments are included in the Minnesota Tax Commission figures, the difference would be increased by \$3,500,000. In studying the expenditures for agriculture, the data from the State Tax Commission Office are preferable as no estimating is necessary for the total amount of taxes paid.

A problem which arises in a study of this character is the compilation of comparable data for earlier years. Early reports are usually less complete and less accurate than late ones. They also may have been issued less frequently. In computing the expenses for the earlier years, two problems arise, that of handling the data from inaccurate and incomplete reports and that of interpolations between intermittent reports. It should be recognized that straight interpolations may not show correct trends or variations in the item of expense involved. Because of these conditions, one should not stress too much the reliability of estimates of expenses for the earlier years. On the other hand, one can reasonably expect that not only more reports but more accurate and more frequent reports will be made in the future of farmers' expenditures so in the study of trends or comparisons these things should be considered.

Some items of expense serve both a farm and personal use. Examples of such items are automobiles, telephones, daily papers, and taxes and insurance on personal property. With such items, an estimate of the proportion chargeable to the farm is necessary. An estimate by farmers is a fair basis for determining the proportion of such items as automobile, telephone, and daily papers which should be charged to the farm. In some studies it has been assumed that the amount of telephone expense chargeable to personal use offsets the amount of daily paper expense chargeable to the farm. In some localities the proportion charged to the farm is greater with certain items than with others. In a region where butterfat is an important commodity of production, frequent trips to market are necessary and the automobile is used for this purpose. Under such conditions, a larger portion of the automobile expense should be charged against the farm than in a wheat-producing section where the crop is not marketed by automobile and frequent trips to market are not required. The allocation of the telephone and daily paper expense between the farm and personal use may be more difficult than other items. The expense for daily papers received by farmers in Minnesota for the year 1931 amounted to over one-half a million dollars. The 1930 census reports 114,693 farms having telephones. At \$1.50 a month the total telephone cost to the farmers, exclusive of tolls, is over a million dollars. It would be difficult to determine

the amount of personal property tax and insurance on household goods as the value of all personal property is listed together.

The total farm expenditures for 21 items in Minnesota for the year 1930 amounted to \$166,354,949. The items included were taxes, labor, interest, feed, threshing and corn shelling, machinery, gasoline, buildings, twine, automobile licenses, feeder livestock, insurance, electricity, fertilizer, spray material, stallion fees, farmer's organization fees, farm papers, telephone, sacks and veterinary.

In 1920 the expenditures for these same 21 items amounted to \$214,388,906. In this year, the expense for the following items was more than in 1930: feed, twine, threshing and corn shelling labor, sacks, farmer's organization fees, spray material, stallion fees, and feeder livestock. The following items were less: fertilizer, buildings, electricity, insurance, interest, automobile licenses, gasoline, taxes, machinery repairs, farm papers, veterinary, and telephone.

The relative importance of each item of expense varies from year to year due to changes in prices and in physical quantities used. Variation in the expense of most items is due more to changes in price than in physical quantities used. In the following table is indicated the relative importance of certain important items of farm expense from 1910-30. The data for all years and items are not included because of limited space.

CHANGES IN RELATIVE IMPORTANCE OF CERTAIN IMPORTANT ITEMS
OF FARM EXPENSES IN MINNESOTA 1910-1930

Year	Taxes	Interest	Labor	Items exclusive of labor directly chargeable to	
				Crops	Livestock
	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>	<i>per cent</i>
1910	14.1	12.6	35.9	14.1	12.2
1915	19.5	11.9	33.8	13.3	12.6
1920	18.8	12.9	37.9	9.8	10.8
1925	21.3	16.8	25.1	11.2	9.9
1930	24.8	17.6	23.4	8.1	14.0

Expenses which are more or less fixed, as taxes and interest, increased during the 20-year period not only in amount but in relative importance while the relative importance of those more or less variable decreased. With declining incomes, particularly in the latter half of the period, the only alternative farmers had was to decrease their variable expenses.

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THE CALIFORNIA STATE WATER PLAN

California is an example of the statement that in the West water can be called the "fourth factor of production." Rainfall varies from 100 inches in the north-west corner to almost nothing in the southeastern desert region. The valley areas, where the largest proportion of the agriculture is located, have insufficient precipitation even if it were distributed evenly throughout the year. The major portion of the moisture falls between November and April, and often in the form of storms of such magnitude as to produce floods. This means that much of the water disappears as run-off; it is estimated that for the state as a whole more than three-fourths of the rainfall reaches the ocean within forty-five days after it falls. There is also an unequal distribution from season to season, there being wet and dry periods of several years duration.

More than 90 per cent of the utilized water of the state is used for irrigation,

principally a summer use when the dry season is on. However, the extraordinary growth of population of the state is making demands upon the water for other purposes. In 1930 over 73 per cent of the population was classed as urban, which means increasing uses for domestic, urban, industrial, and power purposes, causing a "pressure of population" on water resources rather than upon land, as ordinarily understood. This pressure is accentuated by the uneven geographical distribution of water as compared with agriculture and urban development as shown by the following table:

TABLE I.—AGRICULTURAL AREAS OF CALIFORNIA

Name of Basin	Per cent of Area of State	Per cent of Agricultural Land	Per cent of Water Resources
North Pacific.....	11.0	1.9	37.6
Sacramento.....	16.8	26.8	34.8
San Francisco Bay.....	2.2	2.6	1.2
San Joaquin.....	20.6	36.3	16.8
Central Pacific.....	7.5	4.1	3.1
South Pacific.....	6.8	10.0	1.4
Great Basin (S.E. Desert)....	35.1	18.5	5.1

The two northern basins cover about 27 per cent of the area of the state, 28 per cent of the agricultural land, but have over 72 per cent of the water. These facts are set forth in Bulletin 25, *Report to the Legislature of 1931 on State Water Plan*,¹ and form the basis of the plan aimed at correcting the uneven geographical and climatic distribution of water.

One illustration from this report will show how complicated conflicting water uses can become. The use of water for irrigation has reduced the flow of the Sacramento and San Joaquin rivers to the extent that navigation has been impaired, and the reduced flow has permitted the salt water of San Francisco Bay to move up into Suisun Bay to the detriment of agriculture and industries. This phase of the subject is elaborated in Bulletin 28-A, *Industrial Survey of Upper San Francisco Bay Area*.² This bulletin discusses the economics of plant location, especially as applied to this region where the cost of municipal water and the menace of salt water are important obstacles to industrial development. In spite of the deficiency of water during part of the year, the same region is in need of flood control at other times.

The comprehensive state plan contemplates the construction of 24 reservoirs which will serve 75 per cent of the geographical area and 90 per cent of the taxable wealth and population. The remaining areas are to be served by minor projects or later ones. Both surface reservoirs and underground storage are included in the plan. The plan involves the pumping of water from the Sacramento-San Joaquin rivers up the San Joaquin River and exchanging it for San Joaquin water. Thirteen of the 24 units would have water power features, and the total cost is placed at 595 million dollars. The reservoirs are to impound the run-off during the rainy season, and make it available during the period of irrigation. This would automatically control floods. The release of water during the period of deficiency would keep the Sacramento and San Joaquin rivers at their normal level, thereby maintain navigation and control salinity in the lower part of their course. The alternative plan of a salt water barrier was abandoned in favor of storage and release

¹ All bulletins here discussed were published by the Division of Water Resources, Department of Public Works, Sacramento, California.

² Made in cooperation with the Schools of Commerce or Business of Stanford University and the University of California.

of water. In the South Pacific Coast Basin the plan contemplates the conservation of water in the basin, and the importation of water from the Colorado River and other outside sources such as the Mono Basin.

For immediate development, the plan calls for the construction of the Kennett dam on the upper Sacramento which is to control floods and salinity and permit the pumping of water to the upper San Joaquin Valley where there is a serious deficiency on land already in developed agriculture. The immediate plan does not contemplate the bringing of new lands into agricultural use. In the South Pacific Area the plan calls for an aqueduct to the Colorado River, and flood control and conservation works on the Santa Ana River. The initial units are to cost \$158,900,000. Naturally, such a state-wide plan will disturb existing water rights and the legal phases will be as important as the economic.

Three strictly economic studies were made in cooperation with the College of Agriculture, and one also with the United States Department of Agriculture, namely Bulletin 36, *Cost of Irrigation Water in California*. This study presents detailed figures on the cost of water to irrigators when supplied by public utilities, mutual water companies, irrigation districts, and farm pumping plants. A second economic study is Bulletin 34, *Permissible Annual Charges for Irrigation Water in the Upper San Joaquin Valley*. This involved cost of production and income studies. Cost of production was obtained, excluding interest and water charges, the income estimated on the basis of probable yields and prices, then, after allowing 6 per cent on the investment, the remainder was the sum available for water and additional profits to the operator. This report brings out the interesting relationships between land prices and the cost of water—as the cost of irrigation increases, the amount farmers can safely pay for land correspondingly decreases. Other costs in turn increase or decrease the permissible charges for water.

The cooperative report by the College of Agriculture on the *Permissible Economic Rate of Irrigation Development in California* (Bulletin 35) is perhaps of greatest interest to agricultural economists. Besides the land now in farms, but having insufficient water due to the recession of the ground water, there are large areas of land ready for irrigation as far as water is concerned, and still larger areas which can ultimately be irrigated. This bulletin sets forth the permissible rate of bringing land under the ditch to prevent cyclical over-expansion of agriculture as well as underdevelopment. The rate is based upon population growth of the United States as a whole, but more especially of California. While the authors admit the downward trend of the rate of population growth for the United States, they are inclined to be more optimistic of the future population growth than most of the students of population. They present the theory that wars and panics coming in cycles produce cycles in the birth rate, and that there will be an upswing in the number of children born 1923-40. The reviewer submitted this chapter of the bulletin to Dr. Whelpton of the Scripps Foundation, who writes, "While there may be something to [this] theory, I am inclined to believe that it will not have an appreciable effect in increasing the number of births." Space forbids presenting Dr. Whelpton's supporting arguments.

California's population is so much the result of migration that the future number of people will be more dependent upon the continued migration than upon births. Naturally, the estimating of future immigration is very hazardous. Some of the western states have had much higher migrations in the past than in the last decade, and the same can happen to California. The authors present three estimates of population for the state for 1970, an upper limit of 26,300,000, and a

lower limit of 11,100,000, both of which they consider untenable. Their conservative estimates are:

8,500,000 to 8,700,000 by 1940
 11,500,000 to 12,500,000 by 1950
 17,000,000 to 20,500,000 by 1970

After a careful analysis of trends in land utilization, 1909-29, the possible consumption changes are discussed, and the authors accept the present consumption habits as the safest figure to use in approximating the land requirements of the state (p. 109). An analysis of the needs for expansion in livestock, fruits, vegetables, and field crops is made, keeping in mind both local needs and markets outside of California. This is done with great care with all contingencies and alternatives carefully considered. As summarized on page 169, the additional acreage would be one-half million acres, 1930 to 1940, three-fourths million acres, 1940-50, and for the entire forty years (1930-70) 2½ million acres. The estimates have been carefully made without the over-optimism usual to a state or region in the "expansion stage."

One can find little fault with the conclusions, providing the premises are granted. It is argued that California has increased in population, will increase in population, and therefore will require more water for domestic, urban, and industrial purposes, and to irrigate the land which will be needed to maintain the additional people. Additional land is also needed to supply a given proportion of the fruits and vegetables of the nation as a whole in the future. To supply this water, the state proposes a plan so extensive that the federal government will be called upon to help. Part of this aid will be in the form of flood control, navigation, and the Boulder Dam, but the United States is to advance the necessary funds, and construct the works of the Sacramento-San Joaquin project, later to be repaid.³

California has natural advantages which have been advertised for many decades and are still being advertised. This has been a real factor in attracting population. The policy has been to induce people to come, and then to make it possible for this population to live at low costs by providing state and federal reclamation. However, California is not unique in this respect; other states have a similar land and population policy.

It is interesting to compare other states which have had a substantial growth in population with California. New York State's increase in population during the last decade was almost as great as California's. Illinois, Michigan, and Texas had increases of over a million, and New Jersey over 885,000. All of these states (with the exception of Texas) have lost farms and crop acres. All expect to increase in population in the future, but nowhere is there a policy to increase agricultural production to keep pace with the growth of numbers. Michigan as well as the other Lake States is struggling with the problem of finding other uses than agriculture for its cut-over lands, and New York has launched a twenty-year program of reforestation of former farm land. Even Illinois has a submarginal land problem in her southern counties. The federal government is being called upon to establish forests in some of these states. We are far from having a unified national land policy.

George S. Wehrwein

University of Wisconsin

³ Several plans for cooperative state and federal cooperation in construction and financing have been proposed. *The Commonwealth*, June 2, 1931, p. 72-78.

VOLUME OF FARM MORTGAGE INDEBTEDNESS

The July, 1930, issue of the JOURNAL OF FARM ECONOMICS carried an article by Mr. R. M. Rutledge in which the total farm-mortgage debt of the United States was placed at \$21,000,000,000. This sum is more than twice the estimate of maximum farm real estate indebtedness as calculated by the Bureau of Agricultural Economics, namely, \$9,468,526,000 as of January 1, 1928 and a preliminary estimate of \$9,241,000,000 for January 1, 1930. A footnote statement of the method used by Mr. Rutledge readily reveals the error as having resulted from the assumption that all farms are mortgaged. Mr. Rutledge applied the ratio of debt to value of mortgaged farms as shown by the Census of 1925 to the total value of all farms. By this procedure it was made to appear that all farms in the United States carried indebtedness averaging 41.9 per cent of their value.

The Census reports covering indebtedness on owner-operated farms indicate that the percentage of farms encumbered rose from 27 per cent of the total in 1890 to 37.2 per cent in 1920, while the 1925 figure was reported at 36.1 per cent. The 1930 Census has since reported 42 per cent of owner-operated farms with mortgage indebtedness. In 1928, the Bureau of Agricultural Economics basing its computations on the 1925 Census estimated that an average of 36 per cent of farms of all tenures were then used as a basis of credit. Mortgage on tenant farms is less frequent than on owner-operated farms in most sections of the United States. Part-owner farms typically have much higher frequency of mortgage than do farms of other forms of tenure. But this percentage has averaged less than 50 for the country as a whole, and the comparatively small proportion of this class of farms precludes the possibility of any large contribution to the volume of indebtedness on their account.

The weighted average of these debt frequencies taken in connection with the debt ratio of mortgaged farms indicated debt amounting to 21 per cent of the value of all farm real estate. The application of percentage of total debt reported for various credit sources as verified by comparisons with known volume of credit from important agencies, produces essentially the same total as that reached by the first procedure. These methods and tests are set forth in U.S.D.A. Technical Bulletin No. 288, *Farm Mortgage Credit*.

It is not pertinent to this discussion that Mr. Rutledge's estimate of farm-mortgage indebtedness was only incidental to the principal theme developed in his article. Furthermore, it may be granted as improbable that this gross overstatement of indebtedness has been the means of misinforming those having an active interest in the field of farm finance. This assumption, however, cannot be made for others. The knowledge of debtors' distress in periods of economic strain is conducive to the acceptance of exaggerated reports.

Preciseness of debt estimate may be less important than direction of trend. Nevertheless, the approximate volume of outstanding credit secured by the farms of the country is a starting point for analysis of certain aspects of the farm problem. Inquiries in this field should not be handicapped by the acceptance of erroneous basic data. Lately the volume of farm-mortgage indebtedness has acquired added significance because of its relation to various proposals concerning the disposition of the land-secured obligations of farmers by refunding or other means. Such proposals raise questions in which the volume of credit concerned is of primary importance.

Even though the error of Mr. Rutledge was inadvertent and the author has since become aware of the miscalculation, it is believed to be in the interest of accurate

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research and practical finance to call attention to the misstatement in the medium through which it was made public.

David L. Wickens

Bureau of Agricultural Economics

MINNESOTA FARMERS' RESPONSE TO PRICE RELATIONSHIPS IN THE PRODUCTION OF SELECTED CROPS

A study of the year-to-year variations in acreage of different crops indicates clearly that farmers continually make shifts in their production programs. A number of factors account for the variations in acreage. The more important are the price of the commodity, the prices of alternative crops, damage from disease and insect pests, improvements in varieties, changes in the cost of producing the crop or competing crops, and weather conditions which cause relatively high or low yields. The most important single factor probably is price: not only the price of the commodity in question, but also the relation of this price to that of alternative or competing crops. If the price of the crop is high, there is a tendency to increase the acreage of that crop. A price is high or low, however, only by comparison with the prices of other crops. Hence, the response in production of a particular commodity is influenced by the possibilities of engaging in other lines of production. If the opportunities in alternative lines of production are limited, it is likely that the producers of the particular commodity will respond less quickly to given changes in price than they will if numerous alternatives are available.

The influence of relative prices on changes in acreage becomes more significant when considered in connection with relative yields per acre. The farmer is interested in obtaining the highest net returns from his available resources. In consequence, adjustments in acreage are likely to be based on the expected net returns per acre from one crop as compared with the net returns per acre from other crops. In the discussion which follows an attempt is made to point out the influence of comparative acre returns on changes in crop acreage harvested in Minnesota during the period 1922-31. In general, changes in crop acreage are expressed as percentage increases or decreases relative to the acreage of the preceding year.

Corn.—A shift in the acreage from cash to feed crops usually occurs as the number of livestock increases. The shifts in acreage among the cash crops may reasonably be expected to be influenced largely by the prospective cash returns. It is not so often recognized, however, that even among the feed crops there is also a tendency to shift acreage from year to year, the degree of shifting depending on the relative acre returns of the two crops. This is the case with corn and barley in Minnesota as is shown by Table 1. The relative acre returns of corn to barley are represented by the ratio of the acre value of corn to the acre value of barley. The acre returns used are the average of the fall and spring values. The average farm price during the months when most of the crop is being marketed was multiplied by the average yield per acre. The same was done in the case of the farm prices at seeding time, and an average of the two was then obtained.

Corn acreage shows less percentage variation than that of other crops. Since 1921, the changes in acreage have ranged from 7 per cent below to 12 per cent above the average acreage of the two preceding years. The actual and anticipated acre returns from barley production appear to exert a considerable influence upon these changes.

The lowest ratio was in 1924-25 followed by a harvested acreage of corn in 1925 which was 93 per cent of the average acreage of the two preceding years. As

TABLE 1.—THE RELATION BETWEEN THE RATIO OF THE AVERAGE ACRE RETURNS OF CORN TO BARLEY AND THE PERCENTAGE CHANGES IN MINNESOTA CORN ACREAGE, 1922-1931

Year	Ratio of Return, Corn to Barley	Percentage Change in Corn Acreage	Year	Ratio of Return, Corn to Barley	Percentage Change in Corn Acreage
1925	103	-7	1923	155	+10
1928	108	-4	1931	168	+11
1926	122	-1	1924	178	+11
1927	137	-2	1930	180	+9
1929	150	+3	1922	198	+12

the ratio increases up to 160, corn acreage tends to increase, but beyond this point acreage changes only slightly.

Barley.—Changes in the acreage of barley, which is also an important feed crop, appear to be influenced by the returns from wheat in addition to the returns from corn. The relation between the ratio of the acre returns from barley and the combined acre returns of corn and wheat, and the subsequent changes in barley acreage, is shown in Table 2. A ratio below 70 produces little change in barley acreage, but an increase above 70 is followed by an increase in acreage. In 1927-28, the average ratio between barley and the two crops of corn and wheat was 107, which was the highest ratio recorded during the period of ten years included in the study. The acreage of barley in 1928 was 135 per cent of the acreage in 1927, which represented the largest increase during the period.

TABLE 2.—THE RELATION BETWEEN THE RATIO OF THE AVERAGE ACRE RETURNS OF BARLEY TO CORN AND WHEAT AND THE PERCENTAGE CHANGES IN MINNESOTA BARLEY ACREAGE, 1922-1931.

Year	Ratio of Return, Barley to Corn and Wheat	Percentage Change in Barley Acreage	Year	Ratio of Return, Barley to Corn and Wheat	Percentage Change in Barley Acreage
1922	58	-3	1929	73	+10
1930	61	-9	1927	76	+12
1924	64	-5	1926	85	+19
1931	65	-6	1925	91	+20
1923	70	+6	1928	107	+35

Spring Wheat.—The acreage devoted to spring wheat in Minnesota has shown a distinct downward trend during the past twenty years. Since 1919, the acreage of each year, with the exception of 1925, has been less than that of the preceding year. The principal crops which now occupy the land on which wheat formerly was grown are corn, oats, barley, and flax. In order to study the year-to-year variations in wheat acreage, the trend in acreage has been determined and the acreage in any one year expressed as a percentage deviation from the trend. These deviations are partially explained by the changes in the ratio of the acre returns of wheat to the combined or composite acre returns of barley and flax. As is indicated by Table 3, the acreage planted to wheat is especially responsive to increases in the ratio when the latter is above 90. The response is less elastic when the ratio is between 60 and 80. In 1924-25, the high average fall and spring ratio of 121 resulted in a large increase in wheat acreage in 1925. In the latter year, the harvested acreage was 18 per cent above the general trend.

Flax.—Flax acreage comprises a relatively small per cent of the total crop area in Minnesota. It is, however, becoming increasingly important and the acreage now compares quite favorably with that of spring wheat. In 1931, the harvested acreage of flax was 861,000 acres, and that of spring wheat 1,067,000 acres.

TABLE 3.—THE RELATION BETWEEN THE RATIO OF THE AVERAGE ACRE RETURNS OF WHEAT TO BARLEY AND FLAX AND THE PERCENTAGE DEVIATIONS FROM TREND OF WHEAT ACREAGE IN MINNESOTA, 1922-1931

Year	Ratio of Return, Wheat to Barley and Flax	Wheat Acreage: Percentage Deviation from Trend	Year	Ratio of Return, Wheat to Barley and Flax	Wheat Acreage: Percentage Deviation from Trend
1928	62	-19	1923	95	- 5
1924	79	-13	1926	99	+ 1
1931	88	- 8	1927	100	- 5
1929	90	-11	1922	103	+ 4
1930	92	- 6	1925	121	+18

There is a close relationship between the ratio of acre returns of flax to the acre returns of corn and spring wheat as illustrated by Table 4. The acre returns again are based on farm prices prevailing during the fall when the greater part of the crops are marketed and during March and April, when plans are being made for the current year.

TABLE 4.—THE RELATION BETWEEN THE RATIO OF THE AVERAGE ACRE RETURNS OF FLAX TO CORN AND WHEAT AND THE PERCENTAGE CHANGE IN MINNESOTA FLAX ACREAGE, 1922-1931

Year	Ratio of Return, Flax to Corn and Wheat	Percentage Change in Flax Acreage	Year	Ratio of Return, Flax to Corn and Wheat	Percentage Change in Flax Acreage
1929	103	-29	1922	124	- 1
1925	105	+ 4	1931	128	+16
1927	112	- 7	1924	140	+35
1928	112	- 4	1923	148	+70
1926	119	+10	1930	149	+45

The flax acreage in 1923 was 70 per cent greater than in 1922. The comparative acre returns of flax to corn and wheat in 1922-23 were such as to encourage a substantial increase in acreage. The effect of this particular influence probably was increased by propaganda from flax enthusiasts.

The largest decrease in flax acreage occurred in 1929, when the harvested acreage was 71 per cent of 1928. This decrease was greater than might have been expected according to the relative acre returns of flax to corn and wheat in 1928-29. The flax crop in 1928 was attacked by rust and it is reasonable to believe that farmers anticipated the same difficulty in 1929 and reduced flax acreage further.

Potatoes.—Changes in potato acreage during the past ten years have been closely related to the acre returns of the potato crops of the preceding seasons. The acre returns are determined by multiplying the average September-March farm price (adjusted for changes in the general level of prices) by the yield. In order to account for the change in acreage, it is necessary to consider the acre returns not only of the first preceding season, but also the returns of the second and third preceding seasons. The movement in and out of potato production is retarded by the specialized equipment required for the enterprise. In the case of wheat, barley, flax, and oats, substitution of one crop for the other may occur with little accompanying change in the type of equipment. Two or three years of relatively high or low acre returns are necessary to effect a significant change in the subsequent potato acreage.

As shown by Table 5, the low acre returns of the three crop seasons preceding 1925 resulted in a greatly reduced acreage in 1925. The acreage of this year was 81 per cent of that of the previous year. This is indicative of the type of re-

sponse which farmers make to successive years of relatively low acre returns. The response becomes comparatively inelastic when the returns are relatively high. That is, even though the price situation may be especially favorable, the acreage increases but slightly due to other factors limiting expansion. The fact is illustrated by a comparison of the changes in 1926, 1927, and 1928.

TABLE 5.—THE RELATION BETWEEN THE AVERAGE ACRE RETURNS AND THE PERCENTAGE CHANGES IN POTATO ACREAGE IN MINNESOTA, 1922-1931

Year	Acre Returns	Percentage Change in Potato Acreage	Year	Acre Returns	Percentage Change in Potato Acreage
1925	53	-19	1931	71	+ 3
1924	59	-15	1926	85	+ 8
1929	59	- 9	1921	87	+13
1923	63	-18	1928	88	+ 8
1930	69	- 5	1927	99	+10

It should be added that probably a closer relationship exists between relative acre returns and farmers' intentions to plant or actual planted acreage than between relative acre returns and harvested acreage. Frequently, weather conditions and ravages by insects and diseases during the growing season cause considerable abandonment.

R. W. Cox

P. E. Quintus

University of Minnesota

BOOKS RECEIVED

- Clark, Fred E., *Principles of Marketing*. New York: The Macmillan Company. 1932. 632 pp. \$3.75.
- Horace Plunkett Foundation, *Agricultural Cooperation in Ireland*. London: George Routledge & Sons. 1931. 424 pp. 7s 6d net.
- Hough, Eleanor M. *Cooperative Movement in India; its Relation to a Sound National Economy*. Westminster S. W. L.: Orchard House. 1932. 368 pp. 15 shillings net.
- International Institute of Agriculture. *The Agricultural Situation in 1930-31*. Rome: Treves, Treccani, Tumminelli. 1932. 426 pp. 25 liras. (Reviewed in this issue.)
- Kile, O. M. *The New Agriculture*. New York: The Macmillan Company. 1932. 218 pp. \$2.00.
- MacGibbon, D. A. *The Canadian Grain Trade*. Toronto: The Macmillan Company. 1932. 498 pp. \$4.00. (Reviewed in this issue.)
- Simpson, Herbert D. *The Effects of a Property Tax Off-Set Under an Income Tax*. Chicago: The Institute for Economic Research, Northwestern University. 1932. 55 pp. \$1.00. (Reviewed in this issue.)
- Dawson, E. Sewell. *Farm Management in South Africa*. Johannesburg: Central News Agency, Limited. 1931. 336 pp. 22/6. (Reviewed in this issue.)
- Edie, Lionel D. *Economics: Principles and Problems*. New York: T. Y. Crowell Co. 1932. 879 pp. \$5.00.
- Todd, John A. *The Fall of Prices*. Toronto: Oxford University Press. 1931. 66 pp. \$.75.

BOOK REVIEWS

Research in Farm Management: Scope and Method, by J. D. Black, Editor. New York: Social Science Research Council. 1932. 322 pp. \$1.00.

This handbook represents No. 13 (but is the fifth to be published) in a projected series on scope and method of research in the various sub-fields of agricultural economics and rural sociology. The series is "part of a program of assistance to research in these fields, upon which the Advisory Committee on Social and Economic Research in Agriculture set forth in 1925 under instruction from the Social Science Research Council." Dr. John D. Black of Harvard University, now chairman of the Advisory Committee, also served as chairman of the Special Advisory Committee for this report.

The first 26 pages are devoted to (a) Professor Tolley's "Definitions of the Field"; (b) Dr. Black's "Farm Management as an Applied Science" (with comments by Dr. Holmes); (c) Dr. Roth's and Professor Tolley's "Recent Trends in Farm Management Research"; and Dr. Black's introduction to the main body of the work. The remaining 296 pages of text are devoted to *seriatim* discussion of thirty-eight projects "representative of those now under way or needed to round out the program of farm management research." Most of the discussions of projects include statements of the objective and scope, of the value and uses, and of analytical methods regarded as appropriate to be followed.

Relatively the heaviest burden in preparation of the handbook was borne by the Special Advisory Committee of eleven members, as is suggested by the fact that authorship (individual or joint) of some two-thirds of the 322 pages is ascribed to its members. The contributors were thirty-eight in number, from seventeen different institutions in thirteen states and in the District of Columbia. Dr. Black and Professor Tolley (individually and in joint authorship with others) wrote more than half of the book. No one familiar with published research on farm management can fail to remark the absence of contributors from Cornell University.

The publication was designed to "be of assistance to those engaged in farm management research and to those responsible for its conduct, in choosing projects to be undertaken and in deciding upon methods to be employed and procedures to be followed." Beyond question, the book will serve these purposes. It needs to be, and probably will be, studied carefully both by collegiate students of farm management and by mature research workers in the field. The projects discussed cover fully enough the field as it is now conceived, though the concept will presumably undergo alteration and some aspects of current research were deliberately omitted because they are so widely known. The descriptions of approved methodology are constructively suggestive, though on many points the last word can hardly have been said.¹ The many interspersed criticisms of methods and concepts heretofore widely used in farm management research, and the warnings of difficulties that must be faced in the execution of several projects, can hardly fail to prove useful. The authors state specifically that "users of this report must not look upon it as outlining a program of research for any institution;" and it is to be hoped that this warning will be heeded. But regarded as a map in broad outline, including some approximation to little-explored regions, the handbook seems likely to constitute a notably useful indicator of direction. It does not mark out all of the obstructions, major and minor, that the traveler will encounter, and ought not to be expected to do so.

¹ With reference to correlation analysis procedure as touched upon in the handbook, for example, users will wish to study a recent publication, Stanley W. Warren's *Multiple Correlation Analysis as Applied to Farm-Management Research* (Cornell University Agricultural Experiment Station Memoir 141), May, 1932.

The value of the work would be enhanced by (a) classification of the 38 projects into several main groups; (b) in place of scattered bibliographical notes, an appendix giving a selected bibliography of published research in farm management, classified to accord with the list of projects; and (c) elimination of a mild degree of overlapping discussion.

Space limitations of this review preclude detailed discussion either of the objectives or of the proposed methodology of the several projects outlined. Opinions are bound to differ; and differences are indicated in the handbook itself not only by footnotes, but also (in the "Acknowledgments") by specific reference to the positions taken by Drs. Holmes and Myers of the Special Advisory Committee. Yet, in the main, reasonable opposition to acceptance of the projects, or to the validity of suggested project methods, will affect details rather than general schemes; moreover, it will probably rest not so much upon objections to the projects themselves as upon the actual and prospective relationships of available funds and research personnel to the suggested projects.

Taking the facilities for farm management research as they are, the reviewer somewhat regrets the degree of emphasis given or implied in the report to (1) farm management as a "pure science" and the desirability of developing "principles" of farm management, and (2) the desirability of developing "plans for agriculture." This is not to say that farm management is in no way a pure science, or that either farm management principles or plans for agriculture are not worth attention. It is merely to state the conviction that there is ample opportunity for constructive farm management research that deals with numerous questions narrow in scope, sharply defined, and susceptible of solution, and at the same time important to the farming community; and that programs of research including mainly projects involving such restricted questions tend to accomplish more than programs including mainly projects with far-flung and sometimes obscure or probably unattainable objectives. As arch-types of the former, see Projects 20-22; of the latter, Projects 6, 12, and 36.² It should be noted, however, that although the Committee "... included a considerable list of projects which are comprehensive in scope," it "tried to get away from making even these too general and indefinite as to purpose" (pp. 26, 27).

M. K. Bennett

Stanford University

The Canadian Grain Trade, by D. A. MacGibbon. Toronto: Macmillan Co. 1932. 503 pp. \$4.00.

Dr. MacGibbon states in the preface to his book that: "It is my hope that the present study, by explaining the technique of the trade, will make it possible for any person to discover the bearings of questions that arise in connection therewith without too much difficulty." A further aim is: "to present a comprehensive picture of the Canadian grain trade as it exists at the present time." The first objective is most admirably achieved. In attempting to reach the second objective his treatment of related but not necessarily relevant material detracts from his scholarly and exhaustive exposition of the technique of the trade.

Part I of this book is an historical approach to the study. Apart from Chapter I, which represents an interesting picture of the Grain Trade in the previously un-

² Project 20, "Relative Economy of Different Farm Practices"; 21, "Case Study of Orchard Management"; 22, "Variations in Labor Inputs." Project 6, "Interregional Competition in Agricultural Production"; 12, "Planning the Agriculture of an Area"; 36, "Agricultural Entrepreneurship."

explored period of the French régime in Canada, the historical approach presents material which has been dealt with by many authors in other studies. In the judgment of the reviewer the first four chapters might well have been presented in half the space without serious loss, and with the advantage of more directly attacking the primary object of the book, which the author does not do until Chapter V is reached.

Part II contains the purpose and real content of this book. The author starts with the country elevator and continues logically with transportation, terminals, inspection, routes to export markets, and the commercial practices of the trade. These subjects are most comprehensively and clearly handled. Students of the grain trade, in other countries, will no doubt be delighted with the clarity with which the involved processes of grain marketing are handled. Part of this clarity is due to the unique conditions of relative simplicity which surround the marketing of grain in Canada, a simplicity which is produced largely by geographical influences. But the author must be credited for the clarity of his exposition. The high standard of efficiency in the Canadian trade has been reached by the slow process of evolutionary development through trial and error. As the author deals with each phase of the grain trade he shows the historical development of this particular service or institution and relates the why and wherefore of its changing technique. In this instance his historical approach is most illuminating and makes the otherwise dry reading of descriptive material a pleasure.

The chapters on Country and Terminal Elevators indicate the peculiar relationship between these two systems. It is pointed out that companies controlling country houses regard these elevators as "buyers' plants" and not as a source of profit. The profits from the elevator business are found in terminal houses. A conclusion which seems to force itself on the reader is that the slogan of local cooperative elevators, "Service at Cost," is also true of the ordinary line elevator. On page 349, however, where the author deals with the operations of the Wheat Pools, he states, "Because of the volume of business which they handled during the heavy crop years the pool elevator companies showed handsome profits." The problem of "overages" and "the mixing problem" are dealt with in a most enlightening manner. The growth of government control over these practices and the court decisions defining the powers of the state are outlined. Farmers have long contended that both practices should be abolished. Dr. MacGibbon shows the fallacy of this viewpoint and indicates that under proper supervision abuses in these practices should not arise.

The present reviewer cannot agree with the author, when he expresses the opinion, on page 172, that no conclusive evidence has been produced that the complaints of the British buyer regarding the lowered quality of Canadian wheat can be traced to the practice of mixing. Dr. MacGibbon's contention is that the complaint concerns a drop in protein content. When one considers barley, however, where protein is not a factor, the above contention cannot be maintained. From the reviewer's experience in British Corn Markets he would say that there is conclusive evidence that mixing practices lower the quality of Canadian grain. It should also be remembered that while in general the protein content of Canadian wheat is an indication of its value, neither the Canadian grading system, nor the method of sale to domestic buyers in British markets takes this factor into consideration. It is the appearance of the sample or lot, particularly its freedom from weed seeds and other grain, that indicates its quality and value, and if these are lowered by reason of mixing, the good opinion of Canadian grain is adversely affected.

In Chapter XI, where the organization and operation of the Winnipeg Grain

Exchange are discussed, the practice of "puts" and "calls" receives only brief mention. During the hearings of the Stamp Commission on Future Trading, the evidence on this phase of the Exchange's activities was likewise very meager. The author might have made a distinct contribution to his subject and enlightened the minds of many of us if he had outlined at greater length the need for and the operation of this trading practice.

Growing out of the author's chapter on the Grain Exchange, other reviewers have stated that the book is, after all, only a defense of the present grain handling organization. The present reviewer, both from personal familiarity with the author's viewpoint, and careful reading of the text, is not prepared to agree with this contention. Dr. MacGibbon, however, at various points in the text, leaves himself open to criticism on this score. On page 302, when discussing the attitude of the Pools towards speculation, he contends that the Pools by failing to use the speculative market "sustained enormous losses." This statement disregards the enormous losses which the regular trade sustained in the same market, and friends of the Pool believe the inference unfair. Another criticism, in this connection, is that all the Grain Companies are dealt with in one chapter and the Wheat Pool in another. This seems to imply that the Wheat Pool was in the trade but not of it. The writer's opinion is that the author would have been wise to omit Chapter XIII on the Wheat Pool. There appear to be good reasons for omitting it. In the first place the author sets out to portray the technical handling of grain. Apart from a few minor points, pool practices and regular trade practices agree. Nothing is gained by an extended treatment of the organization set-up of the Pools. In the second place, the business set-up of the Pools has already been adequately dealt with by other writers. Not only is the author's treatment redundant but the set-up he describes has already disappeared. In the third place there are some serious mistakes in his treatment of the subject. On page 331 he indicates that the provincial governments advanced money to promote the Pools. In Manitoba this was not the case. On page 333 it is stated that "the pools were incorporated under the provincial laws governing the organization of cooperative societies." Such was not the case. They were incorporated by special legislation, and the Manitoba Pool, for no good reason as far as the reviewer can see, was made exempt from the provisions of the Cooperative Act. On page 336 we find the statement: "What protection there is to the Pool member against reckless use of the power conferred upon the Pool by the contract is in its nature political rather than legal. It does not rest upon the powers of the Pool member under his contract but by the legislative arrangements whereby he is able to influence the policy of the organization through the election of Pool delegates and through them the election of the Pool Board." The use of the terms "political" and "legislative arrangements" is unfortunate. The Pool member had as much protection and more power than a stockholder in an ordinary company. What protection had a shareholder, or a bondholder for that matter, in the reckless use of power in the malodorous Beauharnois Company? The Pool contracts, while legally between the grower and the Pool, actually were agreements between growers to set up a Pool, and control it. The legal control merely bound the growers together; the "political," or rather the democratic control by the members of the organization, should have provided, and did provide, control of the reckless power of Pool executives. But no power on earth, whether legal, or political, can save individuals or groups of individuals from the reckless use of their own power. Dr. MacGibbon falls into the error of considering the Pool as something apart from the members that constitute it.

On page 355 the statement is made that: "The grain growers of western Canada have behind them 25 years of constructive effort in the field of cooperative marketing." This is hardly correct. The Pools came into being partly because the United Grain Growers Company was not a cooperative association and because the Saskatchewan Cooperative Elevator Association lacked the democratic features of control which should exist in a true cooperative.

Part III suffers from the same weakness as noted with regard to other parts of the book. The chapter on The Canadian Milling Industry is excellent but Chapter XVII, dealing with "The Export Market," for Canadian Grain contains considerable extraneous material, e.g., "The Position of Russia," "The Policy of Holding Wheat," which might well be omitted from a study concerned with the technique of the grain trade. Chapter XVIII, on "The Underlying Conditions of Production," if included at all, might better have been placed near the beginning of the study.

Dr. MacGibbon has made a most valuable contribution to our literature on marketing. The major object of the study has been obtained with clarity and commendable brevity. It is a pity that in the author's attempt for comprehensiveness he has included so much extraneous material that might better have been omitted. Typographically the book has few errors. The diagram of a typical terminal elevator is out of place in the chapter on transportation. The footnote on page 301 should read, "See page 78, also 424."

H. C. Grant

University of Manitoba

Farm Management in South Africa, by E. Sewell Dawson. Johannesburg: Central News Agency, Ltd., 1931. 336 pp. 22/6.

From a sparsely settled country mainly engaged in exporting skins, horns, ivory, and other commodities derived from game, to a more thickly populated country—the result of the opening of mines and extending of railroads—South Africa has turned to the working of the land, and is faced with "an advent of a commercial economy in farming," according to this new book. The author, Farm Manager of the Experiment Farm of the University of Pretoria, has written 332 pages of interesting and well-developed analysis of and definite recommendations for South Africa's agricultural problems. He stresses as underlying conditions prevalence of plentiful and cheap lands though of relatively low producing power, a plentiful supply of low-priced labor, a narrow range of available crops in light of market conditions, relatively large farms, a scarcity of capital, and a lack of understanding concerning many of the financial and technical problems that lie in the farm management field. Out of a wealth of discussion he tends to stress livestock production as having greater income possibilities generally than crop farming.

The book begins with a brief but pertinent discussion of the personal aspect of farming as this is reflected in its appeal, misconceptions, need for a high order of intelligence, difficulties, possibilities, experience and knowledge requirements, and income possibilities. Next he introduces the field of farm management with some discussion of various phases, such as management of labor, keeping of records, analyzing the farm business, working capital, value of precision, and supervision. Then follow detailed analyses and recommendations in connection with the primary factors of production (which he lists as capital, land, and labor), with discussions interwoven with respect to taking up a farm, implements, tractors, and use of credit. Four of the seventeen chapters of the book deal with "Farm Enterprises," one with "Man-

agement of Pasture and Soils," one with "Marketing and Cooperation," and one with "Records and Accounts."

The inclusion of considerable material savors more of plant and animal industries than of strict farm management, but as one conceives of South African conditions from a reading of this book it is obvious that the selection and arrangement of material was made with the *locale* and specific needs of this country in mind. In the preface Dawson pens: "Many years of experience as a working farmer have suggested to me certain aspects of the business of farming which are of particular interest to the farmer, but which, through lack of opportunity, are seldom studied on the farm. Some of these are usually not dealt with in the subject of farm management, but nevertheless have been included in this text."

The American reader will be intrigued by some of the unfamiliar words, such as: veld, monkey nuts, rondavel, hamel farming, backvelders, and piglets.

Some of the conclusions underlying farm management for South Africa are especially well elucidated. Several pages are devoted to a discussion of the Law of Diminishing Returns to show how the most profitable arrangement of the factors of production (capital, land, and labor) are governed by the quality of these factors and the quality of their use, so that the best results require that "best use be made of the dearest (or scarcest) factor of production." In South Africa capital was formerly that scarcest factor but since 1918, accelerated by government agencies, more capital is available. Though land is cheap and justifies extensive farming, yet better results would accrue from increased input and increased returns. Labor is low priced and plentiful and use of labor thus replaces extensive use of machinery. As a result of the operation of the Law of Diminishing Returns, South Africa can best use capital and labor on a modified extensive scale.

Proper use is as essential as the amount of capital. "A good proportional allocation of capital would be approximately 65 per cent fixed and 35 per cent working capital," with emphasis on the latter, "with a minimum requirement of £2,500 required," and £4,000 for the majority of prospective farmers to "make the undertaking reasonably secure."

In connection with developing a farm, stress is placed on planning for income first and improvements second, holding to a strict minimum of only urgently necessary improvements until the income possibilities are established.

These are enough examples to indicate the tenor of the text. There are pages of succinct and pertinent suggestions and observations, the reading of which is sure to be helpful to every prospective and actual farmer.

The book is a presentation of concrete prescriptions rather than a recital of methods designed to indicate how each problem should be handled. For instance:

"The prospective farmer must realise that if . . . his capital is too limited to provide both for a decent house, a sufficiently well equipped farm and proper provision for running expenses, it is the house which should wait."

"In most areas Dutch barns for protection of hay are a luxury. . . ."

"Fencing should be permanent and it is a great mistake to purchase cheap wire . . ." and "Although fencing may be a great aid to the farmer . . . beginners with a scarcity of capital must understand that abundant fencing is rather a luxury earned by success, than a primary necessity. . . ."

"The farmer (who borrows) should realise the seriousness of the step he is about to take . . . borrowing may be wise or it may be folly, it depends on the man and the circumstances. . . ."

"Share farming is sound for the young unmarried man with little capital."

"Tenancy offers better opportunities in farming for men with small capital than does ownership."

"... the safest time to enter farming is during a depression. . . ."

"Because the labour is cheap it is generally inefficiently used."

"It appears that the tractor is not justified under most conditions of agriculture in South Africa at the present time. . . ."

One's impressions of this new book on farm management, though written with South African conditions in mind and for practicing farmers rather than for the active farm manager, is that the entire exposition contains a great deal of value for farm management investigators and students in all parts of the world. It is a distinct and unique contribution to our farm management literature and deserves a place in every agricultural library. Its teachings can well be weighed and utilized to excellent advantage. I commend it without reservation to the careful attention of every farm management man.

The weakest chapters of the book are those devoted to "Marketing, Cooperation, and Transport" and to "Records and Accounts." These chapters leave one with a sense of incompleteness. They offer so little other than of a suggestive nature that their omission would not have been serious.

E. L. Adams

University of California

Siam: Rural Economic Survey 1930-31, by Carl C. Zimmerman. The Bangkok Times Press, Ltd., Bangkok, Siam. 1931. 321+viii pp.

This is a unique book and one that is highly valuable. It is unique because it represents one of the earliest and the most elaborate attempts to apply the techniques of social investigation as developed in the United States to an Asiatic situation. It is unique also because the survey could not have been made without the cooperation of The International Missionary Council, presided over by Dr. John R. Mott. For the second time within half a decade this organization sent an American social scientist to a foreign land to study the rural situation. In each case, though a report was made to the missionary organization, perhaps the greater contribution was the wider study conducted by the invitation and with the active cooperation of the government. The other instance was the survey of rural Korea by the present reviewer in 1927-28.

The survey is valuable because it brings together a mine of information about rural conditions in a too-little-known but highly civilized and significant land, and arranges that information in logical categories that permit comparison with conditions in other countries. It is valuable also because it sets a standard for studies of this type whether undertaken by trained nationals or foreigners. But beyond all this the study is valuable because of the profound effect it is having on the thinking and policy of the Siamese Government in regard to agriculture and agriculturists.

All this is not to say that Zimmerman's work is above technical criticism in every particular. It is not. But the weaknesses are relatively minor; the values are major and it is these that the reviewer chooses to mention because a work as valuable as this one and destined to have but a meager circulation in this country merits no emphasis upon flaws at the expense of some account of the work itself.

Let the reader visualize first of all the task faced by the author of such a report plunged into a totally strange scene among a people of different color and language than his own. A guest of the government, he finds his time mortgaged by important social functions of official character. He must avoid entangling con-

nections with political leaders or government cliques. A guest of missionaries and sent out by a missionary organization, he finds his every action and word judged by its possible effect upon the missionary enterprise.

The very process of getting started on field work is completed only after many delays, each essential, each disturbing. Nor is field work an unmitigated joy. Miles from civilization, surrounded for days by men of another race, eating strange food, conforming as far as possible to strange customs, always the object of kindly but unflagging interest on the part of all from the humblest farmer to the provincial governor, fatigued by constant travel, enervated by tropical heat and ever menaced by tropical disease—that is rural socio-economic field work in much of the Orient.

In spite of these handicaps Zimmerman in a year has produced this significant study. True, he had the unlimited cooperation of the Siamese Government which assigned him many helpers.

Throughout most of the field work he had a staff of from fifteen to eighteen persons, and during the tabulating period about ten persons worked up the data. Forty villages were surveyed and in each studies were made of at least fifty families. The author personally visited every village studied and stayed throughout and shared in the field work.

The scope of the investigation can best be indicated by listing the more important chapter headings: The Families and Their Agriculture; Cash Incomes and Expenditures; Farm Costs, Taxation, Gain and Investment; Wealth and Economic Progress; Expenditures for Living; National Rural Cash Income; Internal Marketing of Agricultural Products; Agricultural Credit; Health and Medical Attention; Food and Diet.

Readers of this journal will be interested chiefly in the major findings and in certain features of the methodology. The primary objective of the study was to show the relationship of rural life in Siam to national development. The study was not limited to strictly economic phenomena. It considered all major factors in the light of their influence upon the economic and social development of Siam. The schedules were approved by a group of specialists representing four ministries and after an initial try-out were revised. Every piece of work was checked by at least two people before the survey team left any given community. Besides government sanction and cooperation local headquarters were established in the temple and the cooperation of the monks thus secured, a factor that lent prestige to the inquiry. In addition to a friendly approach peasants were given free medical treatment, medicines or physical examination before they were questioned. The psychological conditions were therefore excellent. The field staff operated as an undivided unit to allow for checking of data and forestall individual interpretations.

Rural communities in Siam are of three main types; villages along streams are the most numerous. These are devoted to rice culture. The next most numerous type devoted to fruit raising is more similar to the scattered American farming area. Finally, there is the "grouped village," more numerous elsewhere in the Orient, whose inhabitants cultivate rice lands surrounding the village. Households averaged between five and six persons and for every 100 families from one-half to three-fourths of the families had children permanently residing away from home. Here as in most of the important findings of the study there were sharp regional differences. National totals are as unrepresentative of any particular crop area or region as they are in the United States. Size of farms, for instance, varied fourfold and the proportion of landless families ranged from 14 to 36 per cent, tenants ranged from 5 to 30 per cent of all farm operators, but in one village the proportion was

84 per cent. Rental was on a cash basis in two of the four regions and on a share basis in the other two. In two regions only one-fifth of the rice was sold and that locally to landless merchants and laborers. In the other regions from two to three-fifths was sold, much of it by shipment to the capital, Bangkok, a city of a million inhabitants. Nonetheless rice represents 68 per cent of the value of the total exports of Siam. There are about two water buffaloes or bullocks per farm, used for farm power and hauling. Nearly every family has a pig. There is, as in China, little poultry. In areas that sell rice, farms range from twelve to eighty acres. In the self-sufficing areas the range was from two-fifths of an acre to eight acres.

The study sought to discover the cash income of the country people, its sources and distribution, and the factors affecting its size. Cost of living as such and farm management were not investigated. Natural goods consumed at home were not considered as income. The proportion of income derived from crops varied from one-fifth to one-half. Animal products accounted for from 3 to 12 per cent and fish sales for from 1 to 9 per cent. Crop and animal income were inversely correlated. Miscellaneous income was about half of the total being made up of wages and rentals in cash from farms. The chief items of expenditure were farm costs, from 5 to 17 per cent; taxation, about 5 per cent; interest, food, clothing and household items. All living expenses consumed about three-fifths of the total expenditure. Savings constituted almost one-fifth of the disbursements. These results cover the crop year prior to the survey which happened to be the year before the world-wide depression made itself felt in Siam. "Agriculture in Siam is an industry which combines labor and land in production to a much greater extent than in countries of greater commercialization of agriculture." It should be remembered that such detailed calculations as are here barely hinted at, but supported by nearly 50 pages of tables,¹ are relatively easy to secure in a simple agricultural economy where every farmer knows accurately how many bags of rice he raised and where almost any expenditure is a matter of importance.

In a brief but important chapter on wealth and economic progress, Zimmerman shows that the average net inventory of the farmer is about \$500, about one-fourth of which has been inherited. The average farmer is 44 years of age and in his 24 years of farming has averaged a self-made gain in capital assets of about \$15 a year. Debts average 5 per cent of the inventory which includes real property, movable equipment and property, and jewelry and bullion. The average cash income of rural families varies regionally from about \$35 to \$115 per family. The standard of living, however, is superior to that in many Oriental countries.

There is practically no cooperative marketing in Siam and the peasant is exploited by buyers since he has no means of knowing current crop quotations at Bangkok. Zimmerman presents a careful month-by-month study of rice prices for two years and gives a well considered program for marketing reform.

The problem of marketing as well as that of credit and indeed many other of the phases studied is affected by the fact that two of the regions have almost pure self-sufficing agriculture, one almost pure commercial economy, and one area is about half and half with the commercial economy gaining. In the matter of credit for instance in the region of commercialized agriculture, one-half of the farms had loans. In the other regions only from one-ninth to one-fifth were so encumbered.

¹ The tables alluded to are usually on a village by village basis. All results are similarly substantiated. There are all told 137 pages of tables, many on a village by village basis and all on a provincial and regional basis.

In the latter areas especially many loans were non-interest bearing, but where interest was charged the rates ranged on the average from 21 to 32 per cent. Rates were highest in the areas of self-sufficing agriculture. There are 129 cooperative credit unions in Siam with an average capital of \$3,500. These charge 12 per cent. Zimmerman outlined an interesting plan whereby these societies could so expand, in cooperation with the Siam Commercial Bank and the Government, as to take over the agricultural debt of the country in about twenty years. The lack of local credit agencies is a major problem in Siam.

The two chapters on Health and Diet are most interesting. Siam, like much of southeastern Asia, is underpopulated. Exhaustive study eliminated all factors as major causes of this phenomenon except the high death rate. This death rate is unchecked by the use of western medicines, except for vaccination for smallpox. The death rate moves in cycles though some infectious diseases affect some of the people all of the time. Single diseases carry off children; adult deaths are the cumulative effect of many diseases. There are many quack doctors but no qualified physicians in rural Siam. In addition to a public health program to meet the particular needs of Siam, Zimmerman advocates a "junior doctor" system comparable to the recent suggestion of a past president of the American Medical Association for meeting the needs in those sections of rural America deserted by doctors. Twenty-five pages of tables present the results of the health investigation.

The second last chapter discusses regional problems and is important both because of the data and because of the emphasis on the too neglected concept of regionalism.

The final chapter presents a national program for rural Siam to which allusion was made early in this review. All the author's Siamese colleagues joined in approving this program and the other suggestions made.

This volume, then, despite its evidences of hasty writing and the limitation imposed by its being written for the government and not for the general reader, is an important volume that repays study and that has the virtue of presenting the detailed data upon which the interpretations and conclusions are founded.

Edmund de S. Brunner

Columbia University

The Rural Community, by Dwight Sanderson, Boston: Ginn and Co., 1932. ix, 723 pp. \$4.40.

This book presents, without doubt, the most thorough sociological analysis of the rural community which has yet been published. The author has brought together a vast quantity of material bearing upon his chosen subject. With great care and fine insight born of sound scholarship and wide experience with rural life he has produced a comparative and critical analysis which no serious student of rural society can afford to ignore. The book should be widely read by those who are interested in the history of agricultural society in general, and in the future of rural life in the United States, in particular.

Professor Sanderson states his task as an attempt to examine "different types of rural communities—their structure, function, and behavior—to determine the process of evolution of the rural community as a sociological group by historical and comparative methods." (pp. 12-13.) He distinguishes five important types of rural community: (1) the primitive agricultural village; (2) the village community; (3) the modern agricultural village; (4) the modern rural community; and (5) the large rural estate. The development of these types is found to be closely related to the development of agricultural technique. The author treats the fifth type of community

only incidentally. He devotes approximately 100 pages to the primitive agricultural village, 300 pages to the village community and 200 pages to the modern rural community. The book is well documented and includes excellent bibliography and comprehensive indices.

It is impossible within the limits of this review to present a digest of the book under consideration. Those who are familiar with the extensive literature dealing with the agricultural life of the simpler peoples and with the agricultural village communities of Europe and Asia will find it well summarized with respect to the structure, relation to the land, systems of economy and the political and social organization, institutions and control of these community types. The author finds that the village community which served so well to develop a stable agriculture through the means of common defense and mutual aid was forced to give way before the development of communication, advanced forms of agricultural technique, commercialization of agriculture and the growth of individualism. The modern rural community consists of dispersed farmsteads and a village center held together by bonds of common interest. Such a community could appear only under conditions of free or cheap land, sufficient security for isolated settlement, and a system of land inheritance which brought individual rather than family succession and made the maintenance of economic efficiency possible.

The modern rural community is not a unitary economic area as was the village community. It is, rather, a voluntary association of more or less independent units. It began about the primary institutions of school, church, burying ground, etc. These created neighborhoods. With the coming of modern methods of communication and transportation and the commercialization of agriculture, the market relations with the villages together with the correlative social contacts, integrated the various neighborhoods of the village trade basin into a voluntary social whole with the village. Social economy began to dictate that the village become the common meeting center. With the rise in standards of living and increasing contact with village and urban people, the farm population began to demand more ample institutions and a greater number and variety of services which more and more tend to be polarized in the village. Thus the village tends to become the natural rural community center, or nucleus, and the author is convinced that it will continue to be so (p. 550), though he recognizes the possibility of open country communities. This condition is substantially true of the northern United States. The southern states are still largely on the neighborhood basis.

Professor Sanderson stresses the fact that the primitive agricultural village and the village community which succeeded it were locality groups, while the modern rural community is both a locality group and a system of voluntary associations. This situation results in a less stable community, territorially, but, functionally, it provides for greater rationality and flexibility. These points have confused many students of the modern rural community.

With respect to the future of the rural community Professor Sanderson is optimistic. He believes that the present type of community consisting of dispersed farmsteads and village center will survive. It will become further enlarged, however, so that the village center will approximate 1000 population, with possibly smaller satellite centers existing chiefly for non-economic reasons. (This would mean, of course, that the number of farmsteads—and consequently the land area—tributary to the village center would increase also.) This increase in area and population, he believes, will further enhance the special interest type of group organization, will increase freedom from the dead level of custom and convention and will further raise the level

of community services and institutional quality. The author recognizes that a permanent tenancy and an industrialized village center would hinder this development. He has faith in the possibilities of a better land policy, and though he sees the migration of urban industry to the smaller centers as inevitable, he believes that by means of producer cooperation and consumer cooperation most of the conflicts will be resolved. He sees the necessity of a larger local political unit which will be co-extensive with community lines. He believes that, with the growing heterogeneity of the rural community, the only hope for self maintenance lies in the development of social attitudes through the school. He does not, however, indicate the considerable change in our present educational procedure which will be necessary to produce this result. The community implications of large scale farming are not discussed.

Finally, the author applies the best thought of the social psychologists to the problem of community organization and reaches the theoretically sound conclusion that the rural community can bring order out of disorder and move in the direction of social progress only in proportion as it substitutes for custom and outward authority a psychological consensus based upon its own system of voluntary association and progressive discussion of common problems. Through this rational process the community will be socialized and a planned local program will supersede exploitation by the great derivative groups of the state and nation. To this the critic can only retort: truly this is the Way, the Truth, and the Life; but there is no assurance that human ingenuity will be able so to control the factors of social organization as to accomplish this most desirable social aim. However, there appears to be no other road, but the road back to mediaevalism.

C. E. Lively

Ohio State University

The Agricultural Situation in 1930-31. Geneva: The International Institute of Agriculture. 1932. 426 pp. 25 liras.

The Agricultural Situation in 1930-31 is the second number of an annual designed to supplement and interpret the information contained in the Institute's *International Yearbook of Agricultural Statistics*. The subject matter treated in the publication's 426 pages is indicated by its six chapter headings into which the material is divided: I The Development of the Agricultural Crisis, II Notes on Market Conditions, III International Action in Connection with Agriculture, IV Government Measures of Farm Relief, V Action Taken by Voluntary Organizations in the Interests of the Producers, VI The Economic Conditions of Agriculture.

This is more of a handbook and ready reference volume than an interpretative and analytical treatise of the agricultural situation as a whole. The classification is for the most part by countries and by commodities. The first chapter is an exception to this generalization.

In treating of the development of the agricultural crisis, emphasis is placed upon the lack of balance in the economic practices of the nations of the world. The dislocation of trade through changes in boundaries; the increase in number and variety of barriers to international trade; together with debts and reparations: have tended to dictate the flow of goods, capital, and gold. The distribution and concentration of gold are looked upon as a result rather than a cause of this lack of equilibrium.

Students of international impacts in their relation to agriculture will find this book a handy reference to the activities and findings of the numerous international conferences held during the year to consider the plight of agriculture and to prescribe measures for its relief. It will serve also as a digest of the more important farm relief measures enacted by different governments, as well as the relief activities of

voluntary cooperative organizations of the various nations. Some 150 pages are given to a description of the economic conditions of agriculture in forty-five countries.

There is a marked similarity in the subject matter covered and its manner of treatment in the *Agricultural Situation in 1930-31*, with that of the League of Nations recent two-volume work on the *Agricultural Crisis*. The Geneva publication is the result of the deliberations of the Committee of Agricultural Experts of the League. The Institute volume is a staff product. Regardless of this difference of origin the ground covered is practically the same. In the two publications the American reader has material in ready reference form on the International aspects of the Agricultural situation.

Asher Hobson

University of Wisconsin

The Geography of the Mediterranean Region; Its Relation to Ancient History, by Ellen Churchill Semple. New York: Henry Holt & Co., 1931. 737 pp. \$4.00.

The late Miss Semple was America's outstanding anthropo-geographer. Her *Influence of Geographic Environment* (New York, 1911) is still the final authority on the subject in the English language. So also is her *American History and Its Geographic Conditions* (Boston and New York, 1903). The volume here reviewed will hold a similarly high place in its field.

This volume is much more than a geographer's study of just another geographical region. It is a comprehensive and mature analysis of the most significant geographical region in all the continents, and the author has written with this fact cogently in mind. At the beginning of the first chapter we are reminded that "All the world is heir of the Mediterranean. . . . Much that is finest in modern civilization traces back to seeds of culture matured in the circle of the Mediterranean lands and transplanted thence to other countries, whence they have been disseminated over the world. . . . This Mediterranean sea with its bordering lands has been a melting-pot for the peoples and civilizations which have seeped into it from its continental hinterlands . . . and it has been also a distributing center for its composite cultural achievements. This double rôle in history is an outgrowth of its geographical location and its relation to the neighboring continents. . . . The intercontinental location of the Mediterranean Sea afforded the fundamental geographic conditions for a cosmopolitan culture; but further refinements and differentiations ensued as a response to conditions within the circle of the Mediterranean lands."

The present volume affords us the results of some twenty years of intensive research and scholarly study and numerous journeys to the Mediterranean basin for field work, in the course of which Miss Semple visited nearly all parts of the coasts and their immediate hinterlands. Chapters 10 through 17 have from time to time appeared as articles in *Agricultural History*, the *Geographical Review*, and the *Annals of the Association of American Geographers*, thus indicating the progress made in this enterprise, but it remained for the completed work to reveal how greatly scholars and students were to be indebted to her.

In developing the subject, Miss Semple has divided it into four logical and distinct parts. General geographic conditions in the Mediterranean region are considered in Part 1. The barrier boundaries of the region, which make it a unit, are the subject of Part 2. Part 4 is devoted to Maritime Activities.

Readers of this review will be particularly interested in Part 3 on Vegetation and Agriculture. Its contents are indicated by the chapter titles: Ancient Mediterranean Forests and the Lumber Trade; Pasture and Stock-Raising; Grain Production and the Grain Trade; Sown and Planted Crops; Manuring and Seed Selection; Irrigation

and Reclamation in the Ancient Mediterranean Region; Ancient Mediterranean Pleasure Gardens; Climatic Influences in Ancient Mediterranean Religion; Gods of Rainfall and Tillage; and Climatic Factors in Settlement and Water Supply.

One word more: the clarity of style and the enrichment by classical allusion here exemplified may well be the envy of and model for many writers. A general bibliography is given on pages 709-714, and a list of "Authorities" is appended to each chapter.

Everett E. Edwards

Bureau of Agricultural Economics

The Great Plains, by Walter Prescott Webb. Boston: Ginn and Co., 1931. 525 pp. \$4.00.

This study is devoted to the changes experienced by American civilization when in its westward progress it emerged from the wooded regions and essayed life on the Great Plains. It shows how this area, distinguished from other regions of the continent by a relatively level surface, the absence of trees, and a sub-humid climate affected the various peoples, nations as well as individuals, who sought to take and occupy it, and was affected by them. During the first two centuries of the westward movement in America, the pioneers evolved a technique for the utilization of the humid regions east of the Mississippi River. On the Great Plains they were confronted with an environment for which they had no experience. The region west of the ninety-eighth meridian demanded adjustments, and this volume is the story of those adjustments. As a result of Professor Webb's findings this particular meridian becomes what may be called an institutional *fault*. "At this fault the ways of life and of living changed. Practically every institution that was carried across it was either broken and remade or else greatly altered. The ways of travel, the weapons, the method of tilling the soil, the plows and other agricultural implements, and even the laws themselves were modified."

The chapter on the physical basis of the Great Plains environment not only illuminates the historical chapters of the book, but in large measure serves to explain them. The main facts on the origin, the climate, and the plant and animal life of the Great Plains are cogently summarized.

The chapters on the Plains Indians and on the Spanish approach to the region are excellent summaries of existing information. Particularly valuable is the explanation of the manner in which the natural and human barriers compelled the Spaniards to pause in their northward sweep. The Indians' adoption of the horse gave them an advantage which neither the Spaniards nor the Mexicans were ever able to overcome. Further, the Indians were not conquered until the American pioneers mounted horses and abandoned their single-shot rifles for six-shooters.

In the consideration of the American approach to the Great Plains, emphasis is given to the part played by the popular concept of the Great American Desert, the rôle of the revolver in making conquest of the Indians practicable, and the way the natural characteristics of the region blocked the further westward extension of the southern economic system based upon the plantation, with its staple crops and slave labor.

During the period from 1840 to 1885 the frontier line was held practically stationary along the vicinity of the ninety-eighth meridian. The agricultural frontier jumped across the Plains, established itself in the Pacific slope, and then began to work eastward into the Plains. The last years of American pioneering consisted of a movement from both the east and west into the Great Plains. The pioneer farmer could not successfully undertake the region until new inventions and discoveries,

products of the Industrial Revolution, enabled him to solve the problems of water and fence and extensive agriculture. While these inventions and adaptations were being worked out, improved, and perfected, the cattle kingdom rose and had its being. Hence, the extensive treatment of the origin, spread, and evolution, and the ways of life of this romantic and colorful phase of American agricultural history.

The fence problem is given extensive treatment. In the middle and later years of the decade of the seventies it occupied "more space in the public prints in the prairie or Plains States than any other issue—political, military, or economic." Hence, the forty pages devoted to the history of fences in America—perhaps the most valuable contribution of the book aside from the major thesis expounded.

Similarly useful are the eighteen pages concerning well-making and windmills in the chapter on the search for water. Consideration of the available supply of moisture, the attempts at irrigation, dry farming, and "some vagaries of the search for water" completes this topic.

"Had the land system of the Great Plains been made *ab initio*, or had it been made by people with a desert or semi-arid background, such as the Spaniards had, it would have borne little resemblance to the general land system of the United States. . . . The American pioneers approached the Great Plains with a ready-made system for the acquisition and tenure of land. Before the cumbersome machinery of government could be set in motion to change the system, the pioneers made the adaptation, defied and evaded the law, and set up in the Great Plains an extra-legal system of landholding. . . ." All who are familiar with the attention which is now being given to land utilization will recognize the value of the chapter on New Laws for Land and Water.

The chapter on the literature of the Great Plains and about the Great Plains lacks the comprehensiveness of treatment and perhaps also the breadth of view indicative in the other topics. The contrast between the literature of the cattle kingdom days and that of the agricultural frontier which followed is of interest. In the first there is romance, adventure, and boundless action of men, guns, and horses; in the latter, the harsh realism of the lonely sod hut, the treeless and arid claim, and the relentless blizzard.

The exacting critic may urge that Professor Webb should have included more detailed consideration of the exploration period, and more material on the railroads, especially their construction, and the Indian wars. The student of agrarianism will gain little from the three-page commentary on "Why is the West Politically Radical?" But even so, the volume is a notably significant contribution to American historiography and a reminder of our great need, namely similar studies of America's other physiographic provinces and regions. Each chapter has a useful bibliographical note.

Everett E. Edwards

Bureau of Agricultural Economics

Economic Policy for American Agriculture, Edward A. Duddy, Editor. Chicago: University of Chicago Press. 1932. xi, 150 pp. \$2.50.

"The chapters of this book report the principal papers which were read at a conference held at the University of Chicago, September 7, 8, and 9 of 1931, for the discussion of economic policy for American agriculture."

The introduction by M. L. Wilson is really an excellent brief review in which he says, "As one reads the following chapters one finds there a true recognition of the scope and complexity of the problem of evolving a wise policy for American agriculture. One finds that agriculture is part of a still larger and still more complex

economic structure, and that it is idle to talk of a prosperous agriculture when the industries are idle and millions of people in the cities are without adequate purchasing power. The problem reaches over into an international sphere of action in which political fears and post-war discrimination express themselves in prohibitive tariffs, and in the stimulation of home production of agricultural products with consequent minimizing of imports.

"One is not surprised to find a lack of assurance in the ideas expressed in the following chapters with reference to the possibility of formulating a policy for agriculture, and still less assurance as to what that policy should be. Rather, the conference program as a whole was an effort to take the measure of the task, to see its scope, to determine objectives, and to feel the way toward some machinery of organization by which policies might be framed and made to work."

I. *The Problem of Determining an Economic Policy for American Agriculture*, by John D. Black.

This chapter illustrates the difficulties surrounding the use of terms designating involved concepts. Dr. Black quotes his earlier definition of policy and elucidates what he means by the terms used. But apparently there is no agreement and the discussion indicates that we have had, have not had, do not have, and cannot have a definite policy. However, analysis of the statements seems to indicate that the term policy when applied to the past usually means any consistent trend whether accidental or deliberate. For example, the policy of high tariffs resulting from log rolling by selfish interests. The term policy when applied to the future apparently is synonymous with goals or objectives. The term program apparently applies to immediate and near future action and ought to lead directly towards the long time goals, but it may not, and even if directed towards the goals may result in something different.

In discussing goals the slogan "Balance" is introduced and apparently there are as many different concepts of balance between agriculture and industry as there are of the term policy. Dr. Black seems to use the term balance to apply to numbers of people and their standard of living. Others think that number of rural people can be separated or independent from agriculture. The underlying assumption seems to be that city life is detrimental to the race and yet it offers many conveniences that should be made available in the country even if it requires a subsidy. No thought is given to the possibilities of improving city conditions.

The discussion of balance wanders away on large and small scale competition, and international relations to that of inevitability of economic laws and trends. Dr. Black takes the stand that "we do have some power within ourselves as social institutions if we exercise it, to direct the trend which events shall take—if we can only understand what is going on and prepare for it, and that the policy idea does involve some self conscious planning and direction of activity."

II. *The Foreign Situation as Conditioning American Agricultural Policy*, by E. G. Nourse.

Before the War, industry was expanding in Europe and rising wage levels created demand for our agricultural products. Since the War, trends have changed and along with attempts at agricultural self-sufficiency there has been a curtailment of industry and purchasing power. Reducing our tariff on industrial products or increasing them on agricultural products will not help agriculture much now. The same is true for reduction in production or schemes to make the tariff effective. The problem

will not improve without positive action in disarmament, debt settlement, exchange stabilization, trade stimulating, and industrial revival. "Entrepreneurship is cramped in its operation through financial embarrassments largely political in their origin."

III. *The Problems of Land Utilization*, by L. C. Gray.

"Land policies of the present and future must be shaped in the interest of stabilization and conservation, or to use the more inclusive term, rationalization."

A reconstruction policy should be developed in regard to the remaining unre-served public domain. The homestead law no longer serves a useful purpose. It is difficult to get sufficiently large tracts under one ownership for economical grazing units because of the widely dispersed ownership of small areas.

Under the heading, "The Problem of 'Idle' Land," Dr. Gray raises questions relating to: The keeping of submarginal land out of use; What to do with sub-marginal land in use; Tax delinquent land; Distressed irrigation or drainage districts; Reclamation of new areas; Back to farm movement of unemployed and self sufficient farms. No remedies are suggested but it is asserted that we ought to do something about it.

IV. *Taxation in Relation to Land Utilization*, by Benjamin Horace Hibbard.

This chapter describes the tax situation in the usual manner except that it recognizes that city real estate in proportion to its value is taxed about as high as farm property. Although Hibbard recognizes that a tax on net rent of land eventually comes out of land values and that the power to tax is the power to regulate, the fundamental relations of these relationships to an agricultural policy is not discussed.

Since taxation of land alters distribution of income and property rights, one may well ask, to what extent is private property in land essential to national welfare, or to what extent can land operators act as tax collectors of the share of income attributed to land? If land taxes in the past had been adjusted to take all or nearly all of the annual economic rent and the speculative increases in value of unused land, would there be problems of mortgage foreclosures and tax delinquency today? Even if there is no agreement in what the agricultural policy should be, it surely is important to recognize that taxation is one of the main ways of directing a policy.

V. *American Agricultural Policy in Relation to Population Growth, Urban-Rural Balance, and Consumption Trends*, by O. E. Baker.

The trends in birth and death rates indicate that the total population will increase to about 145,000,000 by 1960 and then cease to increase, perhaps even decrease a little unless counterbalanced by immigration. In 1930 the surplus of children in the farm population of 48 per cent and in non-farm rural population of 28 per cent was approximately enough to counterbalance the deficit of 7 per cent in smaller cities and 20 per cent in larger cities.

"A declining population, unless exports or domestics per capita consumption increases, involves a declining demand for farm products. A declining demand for farm products, unless farmers become increasingly less efficient, instead of more efficient, as has been the trend for a century, involves a declining number of persons engaged in agriculture. *A declining number of persons in agriculture, in turn, involves a declining national population.* Thus a vicious circle is set in motion. Any advances in agricultural technique which increase production per worker engaged in agriculture will accelerate the process." Dr. Baker points out that declining birth

rates in Europe (and other factors) are reducing the possibilities for increased exports of agricultural products. He forgets to point out that it is also reducing the possibilities for immigration from these countries.

The sentence in the above quotation which I put into italics deserves more thought and attention than it receives by Dr. Baker or others interested in Agricultural Policy. Dr. Baker apparently assumes that high birth rates (because of past and present facts) are directly correlated with living in more isolated homes—smallest in large cities, largest on farms. However, if the correlation is with such factors as money incomes, education, and home conveniences then Dr. Black's idea (p. 11) to subsidize agriculture and give the farm population more of these advantages may reduce rural birth rates as low as in the cities and cause a more rapid decline in population than would otherwise be the case. If declining national population is a vicious circle let us not frame an Economic Policy for American Agriculture that makes it more vicious. A study of rural and urban birth rates in France may throw some light on this question. Perhaps a scientific study in this country designed to determine factors influencing size of families is needed before we make unwarranted assumptions.

VI. *Shifting Elasticities of Demand for Farm Products*, by Henry Schultz.

The per capita demand for some farm products has ceased to shift upward and begun to shift downward. The increase in agricultural technique and probable decrease in population growth suggest that we shall need relatively fewer farmers and probably fewer farms. Agriculture will have to adjust itself to these conditions or will have to find outlets in foreign countries.

VII. *Standard of Living as an Objective of Agricultural Economic Policy*, by Carl C. Taylor.

"I take it that no one will deny that the level and quality of life of the people who till the soil is the ultimate measure of any system of agriculture. If that be the case, then the development of a high standard of living for rural people ought to be the major objective of all of our agricultural programs and policies.

"We shall mean by 'standard of living' those material things, those uses of time, and those satisfactions which are a part of the habits of enough people to constitute planes of living. The standard of living will thus include necessities, comforts, and luxuries—those things which persons enjoy and without which they are unhappy. Such desires are very real and all who have them strive to satisfy them. Furthermore, persons measure their success in life, to a large degree, in terms of their abilities to satisfy these desires.

"The criteria or units of measurement are food, clothing, shelter, health, education, religion, recreation, and social contacts. All these are essential to a normal individual or community life. If any of them is lacking, life is abnormal. If any one of them is not supplied in the quantity and quality which squares with physical needs and the social practices of others, life is unhappy."

Dr. Taylor does not mention birth rates or size of families in relation to standards of living except incidentally in one sentence. "In the Alabama study, the total tenant expenditures were found to be approximately 35 per cent below those for owners, although tenant families were 9 per cent larger." However, he points out that, "In a survey of 1014 farm families in North Carolina, it was found that tenants lived in smaller houses, had poorer education, gave less to churches, attended recreational and amusement events less often, and in every way had a lower standard of living than owners." "Anderson discovered that farm tenants in North Carolina sacrificed even

so-called physical necessities in order to purchase and operate automobiles." All of which indicate that increasing the standards of living of the rural population may hasten the vicious circle Dr. Baker mentioned.

The conditions in the single crop cotton belt areas as described by Dr. Taylor perhaps account for the fact that there are more children under five years of age per 1000 women 15 to 44 years old in the old South than in the states further north. (Baker's maps, pp. 56 and 58.)

Dr. Taylor discusses three ways of improving the rural standard of living: "Better and more efficient farming; better business method, farm management and marketing; and teaching, directly, better methods of living."

The first two would increase farm incomes (if larger production did not result in lower price). The third would better living conditions with same incomes. Dr. Taylor points out that for economists to assume that increasing incomes will automatically result in better living standards is not necessarily sound for higher incomes to agriculture may all go into increased land values without any benefit to tenants.

VIII. *Economic Policy and the New Proprietorship in Agriculture*, by C. L. Holmes.

Dr. Holmes' survey and analysis of conditions can best be shown by a few quotations: "The place of the individual farmer in the evolution of agriculture, and in the processes of readjustment so patently necessary in the present situation, has been strangely neglected in most of the post-war discussion of agricultural programs and policy. It would seem that the starting-point in the consideration of the entire agricultural problem is the individual farmer, the one on whose judgment rests decisions involved in whatever degree of readjustment or remaking of American agriculture there is to be." He proposed "to discuss, first, such elements in the agricultural situation as have changed and are still changing the functions of farm proprietorship such as mechanization, changed competitive relations, and changed conditions of demand; and, second, to examine briefly the new proprietorship responsibilities, and the nature and range of types of farm business units as they have been modified by recent developments and as they appear to be developing in the agriculture of the future." "The process of mechanization, as it has developed during these last ten years, represents a significant degree of substitution of (these) cash costs for non-cash costs." "Cash costs are more treacherous in times of depression than non-cash costs represented by the farmer's own effort."

"All the way along the line competition for the existing markets for agricultural products has been becoming more severe. The only surcease from such a condition which now seems in prospect is that which comes from failure of the less efficient producers who eventually will withdraw from the field and thus slacken somewhat the flow of agricultural commodities to the market and to the reluctant consumers."

"In terms of farm proprietorship this means a raising of all of the requirements of entrepreneurship. It means better ability in the organization of farms for economy and efficiency, a keener financial sense in the handling of credit obligations, greater skill in marketing, and greater vigilance in controlling costs."

"We have, therefore, this high contrast; at one end of the scale is the efficient, economic-minded farmer operating his capitalistic family farm and at the other the subsistence farmer with a low standard of living. Undoubtedly in a period such as the present the number of farmers successfully maintaining a high standard diminishes and the number who live from hand to mouth increases. In terms of agricultural progress, the ideal to be worked toward is a progressive increase in the number

and the standard of this upper group with a corresponding diminution in the lower. There will, of course, be all grades between these two types."

"Undoubtedly, the most direct means of shaping the destinies of agriculture in these directions are through the processes of research and education. . . . It seems to me that these two processes constitute a channel through which a well-worked-out national policy for agriculture can best hope to reach its goal. It is certainly a most legitimate and rational public function. Some of these motives may be listed as follows: to shape the industry in line with the general scheme of economy; to conserve our national agricultural resources; to improve the lot of the farming class. . . . To be sure, there are other objectives in agricultural policy having specifically to do with the . . . control of the size of business units, . . . purchase and financing, . . . and corporation farming, but up to this time the prevailing public policy, if such it may be called, has been that of *laissez faire* as opposed to what we have been inclined to call paternalism as manifested in the older countries. . . . All of these considerations are matters of policy directly affecting farm proprietorship. However, the wisdom or lack of wisdom of any body of policy cannot be determined offhand. Research of a most thoroughgoing character is necessary for its determination; and such research will be treacherous in its results if it does not include a thoroughgoing inquiry into the proprietorship side of our agriculture."

If, as Dr. Black implies on page 8, the long-run goals and objectives are the fundamental elements in general policies for agriculture, one cannot help wondering how research can determine the goal or objective. Is it not necessary to assume some kind of goal, objective, or policy before anything but blind and hopeful research can be conducted?

IX. *Money and Credit in Relation to Agricultural Prices*, by Henry A. Wallace.

"Most farmers are chiefly concerned with the difficulty in renewing their loans in times like these. Banks and insurance companies are interested in cutting down their loans. . . . My chief concern is not with these things, but with the larger aspects of the monetary situation which have to do with the general price level. . . . One of the great duties which the larger bankers owe to the world is to conduct the money system in such a way that all monetary causes of price fluctuation will be removed in so far as is humanly possible."

Perhaps bankers have not done all that is humanly possible, but if price stabilization depends on international relations, as Wallace quotes from Colonel Leonard P. Ayres: "In any event it seems to me that attempts at price stabilization are sure to be ineffective unless they can somehow be made international," then it is rather hopeless, because I doubt if it is humanly possible to get selfish people of different nations and races to agree. Even if the bankers agreed, other groups would upset the whole thing by tariffs, quotas, bounties, etc.

Mr. Wallace quotes Warren's theory that there is definite correlation between long-time prices and gold supply. He quotes Snyder to show that general price level is correlated with volume of credit. Correlation does not prove cause and effect relationship and obviously if most transactions are conducted on credit then high prices equal large volume of credit and low prices equal low volume of credit.

The assumption made by Mr. Wallace and many others that adjusting credit to volume of production will stabilize prices has some merit. But the underlying or basic assumption that stabilizing prices will cure or prevent our economic ills or even constitute one of the major objectives of an agricultural policy (as implied by Dr. Knight, footnote, p. 128) is rather far-fetched and assumes a simplicity to our economic system which is not a reality. Stabilizing either commodity prices

or the general level of prices will neither stabilize the proportion of the national income going to wages and consumer purchasing power or create a better distribution of income among human beings.

Mr. Wallace's separation of society into two classes—debtors and creditors—is conventional, artificial, and of little or no value for formulating policies, unless he can show how stabilizing prices will prevent those with big incomes from being thrifty and energetic and anxious to invest so as to get more funds to invest and how it will prevent energetic debtors from borrowing, inventing labor saving devices, and throwing laborers out of work and how laborers are to raise their standard of living and share in prosperity if their money wages are stabilized and prices they pay for goods also stabilized.

X. The Formulation of an Economic Policy for Agriculture, by J. S. Davis.

"This Conference has illustrated the urgent need for such coordination and crystallization. Here we are, specialists, with different points of view, displaying a range of knowledge which is rather large in the aggregate, differing among ourselves on specific points, needing to rub up against one another, but finding that we are not prepared to coordinate and crystallize our views and reach the greatest common denominator of our combined experience."

Dr. Davis states that economists have a tendency towards "cockiness," yet they are timid and afraid to assume any responsibility and spend their time arguing about the few points or details on which they disagree and fail to work together on points of agreement.

"The organization best adapted for carrying out an economic policy or program for agriculture will be determined in part by the concept and content of that policy, and must develop out of the process of hammering out the policy itself. I do not think that we yet know what kind of council could be best set up or that the public is prepared to look to a central planning agency to tell them what to do. We need first to get a better coordination of our thinking; the other may perhaps be an end-product."

Is Dr. Davis afraid of trying any social experiments and does he assume that *laissez faire* intellectual competition among economists and others will result in a best policy and organization? This philosophy seems to dominate most of the papers. However, Dr. Davis resorts to the conventional American method of trying to do something and suggests about seventeen different committees.

XI. Regional Planning for Agriculture, by H. R. Tolley.

"Regional planning for agriculture, in the sense in which the phrase is used in this chapter, involves developing long-time plans for the agriculture of each of the different agricultural regions of the country and coordinating these regional plans into a unified plan for the agriculture of the nation. . . . The plans for the various regions of the country, when coordinated and unified, constitute a national plan for agriculture."

"If a national policy for agriculture had been agreed upon, and the objectives of this policy set forth, a start could be made toward developing plans for the agriculture of the country which would meet those objectives. . . . If the national policy for agriculture involved reducing the agricultural output of the country enough to eliminate our exports . . . or the objectives were to obtain a large supply of food and raw materials to be used by other industries in this country . . . or to be shipped abroad to trade for other commodities . . . or to place agriculture on a basis of economic equality with other industries . . . or to obtain for farm

people as large a share as possible of the national income, . . . to maintain a strong and vigorous class of farm people," then the regional planning would have to be different in each case.

"What can be done in the way of developing worth-while plans, in the absence of a definite policy? There will of necessity be some implied objective in any plan. Suppose that this implied objective was . . . to determine for each region the farming program that is likely to yield the *best returns* in the years ahead in the light of trends in the United States and in foreign countries. . . . It is assumed . . . that if production could be adjusted more nearly to 'market requirements,' or to 'the needs of the market,' agriculture would find itself in a 'more favorable economic position.' . . . This means *higher net incomes to farmers*. . . . Of course, adjustments in one area must be coordinated with those in other areas, to prevent ruinous interregional competition. . . . Just what systems of farming and what use of land in each region will represent the best adjustment to 'market requirements' or to 'economic conditions' are questions which have not been answered. . . . It would be necessary to consider all the regions of the country simultaneously, since the volume of production of a commodity in one region would influence the price that producers of the commodity in another region would receive."

"It should be possible to develop plans based on information now available concerning the agricultural outlook and the production possibilities of different regions, which, if put into practice, would raise the level of incomes from farming. *Similarly, there is sufficient information available concerning the productivity of the different grades of land in most parts of the country to provide a basis for a tentative judgment as to the grades of land that are suitable for agriculture under present and prospective economic conditions.* Thus even though the objectives of a national policy for agriculture have not yet been formulated and agreed upon, agricultural plans of considerable scope can be formulated."

The organization proposed for putting such plans into practice includes "a national agricultural planning council, regional planning councils, state planning councils, and an advisory council for each planning council." The suggested membership and duties of councils are explained in some detail.

Professor Tolley hopes to overcome the interdependence of separate regional planning by coordination through a national planning council and the interdependence of plans for all regions with general policies and world conditions by two methods: (1) making plans flexible and continually changing them in view of the outlook and (2) assuming the general objectives.

Certain words were italicized in the above quotation because they are extremely significant and until one knows just what Tolley meant by the terms or why he chose them it is difficult to understand what he is driving at and whether or not he is consistent.

Why does he call this regional planning *for agriculture*? Why not regional planning of agriculture for the benefit of all the people in the United States?

What does he mean by agriculture—the physical plant of land and equipment, the products turned out, the people directly engaged in the primary stages of turning out the products or some composite of all these plus secondary stages of processing and marketing and the people engaged in these activities?

By "best returns" he apparently means higher net money incomes to farmers. But it is doubtful if social planning of agriculture—better use of resources by better technique—will increase money incomes either to farmers or to society. Better use of the agricultural plant means more products for society, less scarcity, lower land values, smaller rents, and lower net returns to agriculture except in the form of

wages and agricultural wages would only tend to rise in proportion to the general level of real wages for everybody.

Part of the last quotation was put into italics because to me it represents one of the most significant statements made in the book. I agree with Professor Tolley that we have enough information to at least attempt to do something without waiting for more research before starting.

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Die deutsche Landwirtschaft unter volks- und weltwirtschaftlichen Gesichtspunkten.

(Agriculture in Germany from a national and a world point of view.) Dargestellt unter Verwertung und Ergaenzung der Arbeiten des Ausschusses zur Untersuchung der Erzeugungs- und Absatzbedingungen der deutschen Wirtschaft in Gemeinschaft mit zahlreichen Fachgenossen, by Max Sering, Direktor des Deutschen Forschungsinstituts für Agrar- und Siedlungswesen/Abteilung Berlin, in "Berichte über Landwirtschaft," Sonderheft 50, Verlag Paul Parey, Berlin. 1932. 954 pp. RM. 56.-

In 1929, after three years of service, the German committee appointed to investigate the economic situation of Germany with reference to production and markets, was compelled to terminate its studies due to lack of funds. Owing to the shrinkage in federal revenue, all governmental services had to be curtailed. It was unfortunate that the committee had to abandon its work just at that time, since the world crisis in agriculture was becoming clearly evident in changes in production and marketing, and the effect of the combine on the Great Plains of America was being distinctly felt. At the same time the economic depression was setting in in earnest in Germany.

"Agriculture in Germany From a National and World Point of View" represents the final report of this committee. It comprises a volume of nearly 1000 pages. The findings of the committee, however, were considerably amplified and brought up-to-date by Professor Sering and his colleagues. What Sering has produced is much more than a final report. It is really a treatise on the agriculture of a whole country that has few equals in economic literature. One of its outstanding features is the broad, scientific outlook; that is, instead of treating of specialized fields he covers the whole field. Since at the present time the trend in the compilation of scientific knowledge is in the opposite direction, this feature of the report is noteworthy.

Sering's work cannot be surpassed as a description of the new German agricultural policy. At the same time it is a record of the present technical and economic status of German agriculture. In the future all changes in this policy must be built up on the facts and principles that Sering has set down. This is the special significance of the book. In addition, without being a textbook, it is a model for the scope and research methods peculiar to modern "Agrarpolitik."

Two new economic ideas with respect to agriculture are in effect in Germany today. One proposes a system of agricultural production and distribution, and the other strives for self-sufficiency in agriculture for Germany. These ideas are, of course, not new, but they are particularly significant at the present time. Thus the book is itself a symptom of the present economic situation, and explains a policy which, it is hoped, will not, as Sering fears, develop into a new sort of mercantilism. In the following pages, we shall briefly review some of the agricultural facts and problems described in the book. The reader must not get the impression that this is a detailed review and that he cannot profitably refer to the original text.

I. The Agricultural Crisis After the War

Due to the many economic influences that were at work during the period from 1920 up to the present time, the cause of the agricultural crisis is a complex one. Sering distinguishes three definite periods, from 1920 to 1924, from 1925 to 1927, and the great crisis from 1928 up to the present time.

The boom during and after the War, resulting from the great demand for commodities of all kinds, collapsed suddenly in 1920. But the decrease in agricultural prices was not due to overproduction, as is so often claimed. It was due to a drop in the demand. The purchasing power of the allied countries decreased considerably when the United States refused to grant further credit. Hence agricultural products could not from then on be bought at the usual high prices. Furthermore, up to 1923 the world production of wheat was 3.7 million tons below the quantity raised annually before the War, also dairy and meat products had not yet resumed their pre-war output. Due to the economic collapse of Germany in 1923, that country became the marginal purchaser from that year on, and since real wages in many sections fell as low as one-fourth of the pre-war level and a tremendous inflation in the currency took place, the world prices for grain and meat sank to an unusually low point. These ill effects were felt first and most in the United States and Germany. In the United States many farmers had gone heavily in debt as a result of speculation in farm land, and this aggravated the situation. In Germany, during the inflation period, agricultural products temporarily had a higher exchange value than before the War. But in the autumn of 1923, after the currency had been stabilized, agriculture was more seriously affected than ever before. Part of this was due to the price differences between agricultural and industrial products. Additional indebtedness was consequently incurred.

The price movement from 1924 to 1927 seemed to indicate that the agricultural crisis was coming to an end. The acceptance of the Dawes plan, the evacuation of the Ruhr district and the inflow of American credit caused a boom and again raised Germany's purchasing power to the pre-war level. The differences between agricultural and industrial prices partly disappeared.

But in 1928 a new world crisis in agriculture arose. In 1925 the wheat acreage on the North American continent was smaller than before the War. In 1928, however, a sudden and wide extension of the cultivated area there, resulted in a record harvest. This was more than the market could absorb, so a part of it has remained unused, and this is being increased each year by new crop surpluses. Dry farming, the tractor, and the combine are, roughly speaking, the three great stimuli of grain production in the dry plains of the world. From 1925 to 1929 the wheat area of the United States, Canada, Australia, and Argentina was extended by 6.65 million hectare. The production costs for wheat in the primary wheat regions are so low and the possibility of increasing the acreage so great—16 million hectare in the United States alone—that at the present time it does not appear that the pre-war price level can be resumed even if all the surplus stocks should be consumed.

The low price of wheat has drawn down the prices of the other cereals. As a consequence of this and the extension of dairying and meat production into new countries, like Argentina and New Zealand, the prices of dairy products and meats also declined considerably. But there is no overproduction in these products, as contrasted with the cereals, since the use of meat and dairy products has not at all yet reached the saturation point, even in the countries which have ready access to the world markets. The great decrease in the world's purchasing power, especially that of Germany, due to unemployment, has had more influence upon the prices of these products than the supply has had.

The world agricultural situation has not shown much improvement despite considerable governmental intervention. The situation has rather become aggravated as a result of the industrial depression, which has also affected the United States. Germany itself, as a country exporting industrial products, has been hardest hit. The overheated nationalism of post-war Europe has not only created 20,000 km. of new frontier in Middle Europe but high tariff walls as well.

It will be a question of foreign policy how the agricultural situation can be improved. Sering does not make far reaching proposals, but sees from the economic and national points of view only two means of overcoming the crisis. These are a reduction in the rate of agricultural production with a lower cost of production on the one hand, and a diminution of the accumulated surplus stocks on the other hand.

II. The Agricultural Crisis and Submarginal Lands in Germany

The regions of greatest distress in Germany are the mountainous districts in the south and west, the central portions, and the sandy soils of the east. In these districts agriculture, in most cases, has not been the only source of income. Many people have also had part-time employment in industry. Due to unemployment, a large part of the population has become destitute, and there is much privation and misery. The peasants who have no part-time industrial employment are waging a hard fight against the barrenness of soil, an unfavorable climate, taxes, and debt. In addition, the division of the cultivated area into small parcels as a result of inheritance has cut down the size of the farms into uneconomical units, so that many peasants have scarcely enough land for their bare existence. The main steps to be followed for the alleviation of these conditions are the following: consolidation of the many parcels into larger and more economical units, drainage of the swampy soils, cooperative marketing organizations, adoption of new farm management methods—under the present methods 50 per cent of the farmers' time is wasted—and a change in the inheritance laws. Some of the land is really too poor for agricultural purposes. The population ought to be settled elsewhere and the land reforested. In any case, something must be done for these "mountaineers." They must not be abandoned in their misery and be allowed to serve as a source of social infection.

III. Taxation

We do not have sufficient data for an exact comparison of the pre-war with the post-war tax burden. Only bookkeeping records are available, and these allow a comparison of the two periods only in the so-called deductible taxes. These consisted of land tax, property tax, inhabited house duty, sales tax, road tax, church tax, Rentenmark-stabilization duty, the share for the chamber of agriculture, and the dog tax. The increase in taxes from 1912-14 to 1924-26 is lowest in the East German grazing district and highest in the sugar beet regions of Middle Germany. In the former district an increase of 260 per cent took place (from 6 Rm. to 15 Rm. per ha.) and in the latter 578 per cent (from 9 Rm. to 52 Rm. per ha.). The bookkeeping records show clearly that in an ever increasing number of cases the costs, due principally to the increase in the taxes, exceed the income, and the net result is a loss. On the basis of value, each farm owner's taxes amount to 2.5 per cent of the assessed value of the property he owns, the assessed value of the property is nowadays higher than the real value.

The most characteristic feature of the present taxation system as compared with the previous one is the objectivation of the taxes, that is to remove them from

current influences and make them permanent for a period of years. Agriculture has been affected more than any other industry by this trend. In other words, the heavy and inflexible burden of the real estate taxes has assumed the character of a definite, high fixed cost, in which role taxes are much more burdensome and make the problem of farm management more difficult.

The high tax burden is mainly a consequence of the lost war. The internal burden that came into being incidental to it, and the external tributes have immensely increased the requirements of the Federal Government for tax revenues. Hence the Federal Government has taken all of the personal taxes (the income and personal property taxes) and the states and communities have met their requirements with the real estate and occupation taxes. So the major part of the increased governmental demand for tax revenues has had to be met by the communities which did not receive a proportionate share of the remittances of the income tax by the Federal Government. Two major changes are necessary before a lowering of the tax burden may be expected. The first is a decrease in the domestic governmental expenditures by means of simplification of and, consequently, greater efficiency in the administrative machinery, and the second is a just and reasonable adjustment of the reparations.

IV. The Wheat Problem in Germany

Germany's requirements in cereals are about 23 million tons. About 10 million tons are used for food and the remainder is used for animal feed or in industry. The 10 million tons are about equally divided between wheat and rye. The total rye and wheat harvest of 1930 amounted to 10.6 million tons, so that as to quantity the demand for these cereals for food purposes was met. But only 33 per cent of the total rye and wheat harvest consisted of wheat. The remainder, 7.5 million tons, was rye, and only 5 million tons were consumed as human food because after all wheat is preferred. So about one-third of the rye harvest was superfluous. This was used up as animal feed or exported, exportation being the most unprofitable of all. The question is, is Germany able to decrease the production of rye and increase that of wheat? In 1930 the production of rye was excessive by at least one and one-half million tons and one million hectare.

In 1931 the production of wheat was extended by 21 per cent and that of rye decreased by 7.5 per cent, due to a marked difference in price in favor of wheat and the propaganda for wheat growing. From 1926 to 1929 the imports of wheat amounted to an average of two million tons annually. By 1931 this had been decreased to 1.2 million tons. With respect to the percentage of the total area in bread cereals that is devoted to wheat (25.3 per cent), Germany may best be compared with the North European countries with a less favorable climate and a higher percentage of wheat. But more important than the climate is the quality of the soil. Nowhere are such large areas of sandy soils cultivated as in Germany. It is a historical misfortune that in the course of the last 100 years the east German farmers brought so many thousands of hectares of woodland into cultivation, stimulated by agricultural science and the example of many outstanding farmers, and now the farmers of the same region are the most affected by the world crisis in agriculture because of lower prices.

The necessity of expanding the wheat acreage at the expense of rye, oats and even sugar beets is no longer in doubt. But it is possible only within the limits of the present crop rotations. This is not an inflexible traditionalism but a definite necessity. Furthermore, wheat can be successfully grown only on specially adapted soils and with careful use of the basic fertilizers. The expansion of the wheat

acreage will depend largely upon the scientific and technical training of the farmers. Overproduction of domestic wheat need not be feared even if foreign hard wheat will need to be imported for milling purposes in moist years. Under normal weather conditions hard winter wheat is not necessary. The same quality of flour may be obtained by chemical treatment.

V. The Mechanization of Agriculture

Professor Roemer (Halle) comments as follows upon the question of greater mechanization of German agriculture in imitation of the American policy:

(1) The American methods are not applicable in Germany due to the relatively small size of the German farms and their division into many separate parcels in various localities.

(2) The low production costs of American agriculture are possible only where a single crop type of farming is followed. In Germany, however, diversified farming is followed and this must be continued.

(3) Greater mechanization of agriculture would throw many farm laborers out of work and thus to a large extent depopulate some sections, especially east Germany. Reduction in the expenditures for wages would not entirely offset the new expenditures for machinery that would be made. The new investments would also enormously increase interest rates, by demanding considerable new credit.

(4) Since the combine leaves the straw and hence large quantities of weed seeds on the field, the yield per acre would decrease rapidly due to the increase in weed growth. Imports of grain would consequently increase.

(5) There is no universal remedy for the difficulties encountered in cereal production in the various countries. It is impossible to produce grain as cheaply on land which has already produced 1000 to 2000 harvests as on soils which have produced only 20, 50, or 70 harvests, such as America.

Nevertheless, Germany has to strive for a reasonable amount of mechanization in agriculture. Two proposals are probably well worth considering. In south Germany, Professor Münzinger-Hohenheim is carrying on a very significant experiment. He plans to introduce machinery on a cooperative basis into a small community of peasants in that region. A part of the heavy field labor as well as a part of the house work will be done by machinery. Careful attention will have to be paid to private property rights. Adjoining fields will be plowed and sown as one field by machinery, after which each farmer will take charge of his own fields. The project will be a difficult one to carry out because of the individualistic character of the farmer. But the proposal opens a way for a combination of collectivism and individualism to spread over Germany from the east and west. All consolidation of small parcels of land into larger units will probably have to begin in this way. And this kind of a scheme will doubtless need to be incorporated into the new colonization plan for east Germany to a greater or less degree. A large scale type of farming, completely mechanized, not producing dairy or meat products, and a small scale, intensive type will have to be combined there, under a new plan.

VI. Suggestions for Increasing Agricultural Production at Lower Costs

If we stop to realize that the damage done in Germany to farm crops by insects and plant diseases annually is estimated at two billion Rm., we will appreciate the necessity of attaching greater importance to plant pathology. The "Biologische Reichsanstalt" is the scientific center of plant pathology with numerous branch offices over the whole country. In close cooperation with the Kaiser Wilhelm Institute for Plant Breeding they are working intensively toward developing new types

of grain which are resistant to diseases, and in cooperation with the Reichskuratorium for Technique in Agriculture they are developing new machines for spraying plants and trees.

So the government is leading the fight against plant and livestock diseases, especially the more dangerous ones. A great number have already been stamped out. The significance of these efforts may be appreciated if we observe that trichina is found in 5 to 8 per cent of the imported American pork while only 0.012 per cent of the pork produced in Germany is so affected. Plant and animal breeding investigations may soon have other beneficial results. Tasks that may engage the attention of scientists are the development of wheat adapted to sandy soils, of lupines without the bitter taste, of rust resistant wheat, etc. The scope is almost unlimited. All these improvements are of such character that farmers can take advantage of them at relatively small cost and with considerable increase in production. But the performance of the scientific investigations themselves is very expensive and can scarcely be undertaken by private agencies.

VII. The Aim of Farm Relief

Sering's opinions concerning the practical aspects of various farm relief measures that have been proposed are of great value since in formulating his opinions he keeps in mind all the actual practical problems that the nation is confronted with, and does not base his views on purely theoretical premises. Thus, the question of a protective duty vs. free trade must not be solved purely by logical deduction. Neither must the answer be merely an expression of an economic dogma. It must constitute a plan designed to fit exactly the particular circumstances that a country may find itself in. The plan for one country will therefore not be the same as for another.

Leo Drescher

Jena, Germany

Narodnoie Khosiaistvo. S.S.S.R. Statisticheskii Spravochnik, 1932. Social Economy of the U.S.S.R. Statistical Abstract, 1932. 670 pages. Moscow: Published by the Soviet Central Board of Control.

This statistical handbook is intended especially for those engaged in planning work in the U.S.S.R. It attempts to give a condensed statistical picture of the dynamics of the present day Soviet Economy and its scope is indicated by the following major topics covered: I. Industry and Electrification. II. Agriculture. III. Transport. IV. Communication (Post, Telegraph, etc.). V. Construction. VI. Domestic and Foreign Trade. VII. Population and Labor. VIII. Culture and Health Preservation. IX. Finances. X. U.S.S.R. and the Capitalist Countries.

An appendix of twenty-seven pages, included in the Abstract, explains the statistical methods used in arriving at some of the data presented.

"Corrections to errors and omissions" of the text, instead of being attached to the abstract, are contained on a loose sheet of paper, which can thus be easily lost.

G. N. Silvermaster

University of California

Planovoe Khosiaistvo. Planned Economy. A monthly economic journal of the Soviet Gosplan. Published by the State Supreme Economic Planning Commission of the U.S.S.R. Moscow. 16 roubles (\$8) per year.

This comprehensive monthly journal of the Soviet Supreme Economic Planning Commission, now in its eighth year, should prove of interest to those following

the economics of the reconstruction period of the U.S.S.R., and to those interested in the problems, policies, and technique of economic planning.

The task of the journal is to discuss the theoretical and the practical problems which arise in connection with the realization of the gigantic programs of industrialization by which the Soviet Union is striving to catch up and to out-distance the most advanced industrial nations.

The 1932 issues deal primarily with questions pertaining to the second five year plan. The discussions center largely on such questions as to rate of the development of the productive forces in the country and their distribution, the interrelations of the development of the separate branches of industry, cultural activities, etc.

The scope of the publication can be judged from the table of contents of the May issue of 1932, which contains 325 pages and is divided into five large sections. I. Economics and Economic Policy. II. Regional Economy. III. The Capitalist World. IV. The Struggle of the Two Systems (Socialist and Capitalist) as reflected in figures. V. Bibliography.

In section I, there are two articles of interest to agricultural students. "Socialist Reconstruction and Distribution of Agricultural Production in the Second Five Year Plan" (pp. 98-111) by P. Mesietsev, and "Agricultural Economy in the Last Year of the First Five Year Plan." (pp. 141-158) by Professor A. Gayster.

Professor Gayster reviews the agricultural achievements of the first five year plan. Briefly, these achievements are as follows: The Soviet Union, from a country of extremely small peasant farms has grown into a country of large scale agriculture. In 1927 there were 24,800,000 farms in the Soviet Union, having an average area under cultivation of eleven acres. With the inauguration of the "collectivization program," 60 per cent of the small farms have been combined into "collective farms." At the same time there has been a marked growth of the "state farms," that is, farms operated by the state directly. The cultivated area of the Soviet Union in the four years from 1927 to 1931 increased by 56,810,000 acres. Within the same period the number of tractors in use in the country has increased greatly. On October 1, 1924, there were 2,560 tractors (35,600 hp.) in use on the farms of the Soviet Union. In 1931 the Soviet Union possessed 110,000 tractors, and is now second only to the United States as regards the number of tractors employed in agriculture.

The plan for 1932 looks toward complete collectivization of farms growing the basic crops, and a further tractorization, through the spread of the Machine Tractor Stations.

P. Mesietsev's article deals with the objectives of the second five year plan in the field of agriculture. The decisive problem of the second five year plan is to increase agricultural production not by the extension of the area under cultivation, but by securing higher yields and higher quality on the area already under exploitation. This will require widespread introduction of selected seeds, extension of the irrigation system, adoption of machine technology on a larger scale, increased use of chemical and natural fertilizers, etc.

The annual production of grain at the end of the second five year plan (1937) is expected to be 1300 million centerens. The production of oil seeds is to be no less than 100 million centerens, and of sugar beet, 600 million centerens.

Compared with the first five year plan, the production of grain is expected to increase by 45 per cent (wheat 52 per cent, rye 37 per cent). During the first five year plan production of wheat increased by 42 per cent and rye by 22 per cent. The production of sugar beets is to increase 170 per cent in the second five year plan as compared with the first five year plan.

The section dealing with bibliography contains a critical review of the American literature on planned economy (pp. 306-312). The reviewer of this literature expresses the belief that the discussions on possibilities of planned economy in the United States, in view of the private ownership of the means of production, is nothing but an empty dream.

G. N. Silvermaster

University of California

The Valuation of Vacant Land in Suburban Areas, by Herbert D. Simpson and John E. Burton. Chicago: The Institute for Economic Research, 1931, 56 pp. \$1.00.

Anyone interested in appraising real estate will find this little monograph of 50 pages intensely interesting. It describes a method of appraisal for land on the outskirts of our large cities, potential urban land. The authors in their foreword characterize their study as "An Adventure in Research." The significance of this term will be readily appreciated by those who have attempted to appraise or develop methods of appraisal for agricultural or vacant land during the past few years. The land appraiser has few charts to guide him in "normal" times; in times like the present those few prove unsatisfactory as aids in arriving at his goal. The practical appraiser will agree with them in rejecting "sales value," "capitalization of income," "expert opinion," and "past history" and in taking the basic elements of future value as their guides to a "fair value."

The study was undertaken at the request of the Cook County Truck Gardeners' and Farmers' Association. The authors were asked to determine a method by which the assessor could arrive at a "fair value" for vacant land, land which is potential urban land, comparable to the "fair value" of other classes of real estate. This study was not concerned with the fairness of the tax system nor on the other hand with the development of a theoretically perfect method of valuing vacant suburban land. The assessor, they point out, cannot work on his problem, as the physicist can, until he has the correct solution. He must have a set of figures in their proper places on the tax roll by a certain date. This point of view of attacking a practical problem is present throughout the whole monograph.

The authors rejected "sales value" as a method of determining "fair value" not because of the deflation, for, as they point out, the market value of wheat can be found as readily when wheat is selling at 50 cents as when it is selling at \$2.50. Wheat, however, has an established market and there are sufficient transactions on which to base a "fair market value." The market for vacant land on the other hand has almost ceased and many of the transfers which have and are taking place have peculiar or special elements that do not permit the consideration of such values as representing a "fair market value." In addition vacant land is a much more variable commodity than wheat or even than residential real estate. These facts make it difficult to consider any average as representing a general level of "fair market value."

"Capitalization of income" was rejected as a method for the only income this property yields is the income from agriculture. What they were attempting to determine was the additional value the land had because of the anticipated future income from non-agricultural use. They were also compelled to reject "expert opinion" for the simple reason that the "experts" did not agree. "Past history" of booms and depressions in real estate proved no more satisfactory. They found a "dearth of specific facts with regard to the actual movement of land value for cities as a whole and still more for particular areas in or about these cities." The facts which were available indicated "neither trend nor normality."

The basic elements which they considered were outlined as follows:

- “1. Area—occupied and available.
2. Population—present and prospective.
3. Ratio of population and area.
4. The value which land may be expected to have under a given character and degree of urbanization, when it attains these conditions of urbanization.
5. The costs incurred in developing land for urban utilization and in carrying it until it is utilized.
6. Agricultural or other incidental income derived from the land during the investment period.
7. The present worth of all these future elements of cost and value.
8. The actuarial factors applicable to a given area or district subject to these contingencies.”

The method which the authors have developed for arriving at a level of “fair value” for vacant lands from these basic elements is to consider the property as an investment held over a period of years. The investment period is assumed to begin in 1928, the year of the reassessment in Cook County and ends in 1960. They use the best estimates available for the elements outlined above.

The first assumption is that on the average this vacant land will be worth when it is developed for urban use the same as the average of urban land already improved. The average “fair value” of land in urban use, as assessed, was taken as a “fair value” of the vacant land when it goes into urban use. The investor will incur certain costs for carrying the property. These costs (interest, taxes, the costs of developing the property, and a sales commission) are then deducted from the gross sales value. Before arriving at the net return to the investor, the income from agriculture, during the period of ownership, is added to the gross sales value less the carrying costs. The average net return (\$5,606) as thus calculated is the net return when the property is sold. The average present “fair value” of the vacant property, which is to be utilized for urban purposes, is the present worth of this \$5,606 or \$2,207. This present worth is calculated on the basis of a 6 per cent interest rate and an average period of 16 years for holding the property. An average of 16 years is taken because it is assumed that the land will be taken up at about the same rate during the total period of 32 years.

This \$2,207 is not the “fair value” of all vacant land but only of that part which is to go into urban use. The authors estimate that approximately one-fourth (24.4 per cent) of the land available will be brought into use by 1960. This percentage is the actuarial factor listed above. It is arrived at by determining the present number of persons per acre of improved urban land. This ratio of population to land is then applied to the increase in population to obtain the amount of vacant land which will be improved to provide for this increased population. The general level of “fair value” of all vacant land is taken as 24.4 per cent of \$2,207 or \$538.

This method in effect assumes that the 75.6 per cent of vacant lands which are not expected to be needed for urban use have no present value. It is quite plain that such an assumption is not valid. This 75.6 per cent has an agricultural value. If it is assumed that this agricultural value is \$125 per acre then the average will be increased from \$538 to \$633 per acre. There are two ways by which the method could be changed. One is to take the value as found by the method developed, \$2,207, as the present value of the land destined for urban use and the agricultural value, \$125, as the present value of the vacant land which would not be improved and find the weighted average for all the land. The other method would be to find the average layer of urban value which is superimposed on the agricultural value. This could be done by using the authors’ method omitting the income from agriculture and subtracting the agricultural

value from the gross sales value. This average layer of urban value could then be added to the average agricultural value to get the value of the land.

It will be noted that the method developed does not apply to any specific piece of property but is to be used to secure the level of value of all vacant property. There is no method of determining which of the vacant tracts will be improved nor how long it would need to be held before being absorbed for urban use. These are still matters which are left to the judgment of the assessor.

Anyone interested in purchasing vacant property with the expectation of holding the property for the unearned increment would do well to read chapters 3, 6, 7, and 8. Cook County has enough vacant lots in the townships outside the city of Chicago for a population of 220 per cent of their present population. Niles township with a population of 9,000 has enough vacant lots for a population of 190,000. In view of this optimism it is no surprise that the actual assessment averaged of \$1,794 per acre when the "fair value" arrived at by the authors was \$538 per acre. A prospective purchaser of vacant land would also do well to study the chart on page 32 which shows the large appreciation in value necessary to cover the costs of holding real estate. There must be an appreciation in value of over 600 per cent to cover interest on the original investment, taxes, and development costs in a period of 16 years.

The authors make three recommendations. The first is that at the next quadrennial assessment readjustments be made by the method they have developed, the second, that real estate be classified, and the third that an inventory, as made, in this study of the factors influencing real estate values be made at regular intervals. They believe that the assessment policy can materially affect the utilization of land. In suburban areas the assessment policy should be used to direct land into its best use. The policy of assessing vacant land at a low figure, which was pursued during the boom period, tended to stimulate subdivision activity, while the present policy of assessing at a high value penalizes agriculture. In order to remedy these evils they recommend that real estate be classified as 1, urban land, 2, prospective urban land, 3, agricultural land. Taxing subdivided property on the basis of the higher assessed value for prospective urban property would tend to discourage premature development of the land. Assessing the agricultural land at a reasonable value for agricultural use would not put a burden on the owner operating for that purpose and would not tend to induce the owner to sell for developmental purposes at the first opportunity.

The authors suggest that the method be continued and developed as data are accumulated by the future inventories and additional factors be considered as time shows the need for including them. The task is not completed; they believe it should be continuously pursued, always arriving nearer and nearer the goal of an accurate determination of the "fair value" of vacant land.

C. I. Hendrickson

Bureau of Agricultural Economics

The Effect of a Property Tax Off-set Under an Income Tax, by H. D. Simpson. The Institute for Economic Research, Northwestern University, Research Monograph No. 3. 1932. 55 pp. \$1.00.

The author has presented both a valuable contribution to factual knowledge of public finance and an interesting development of quantitative method in this field which is so difficult to treat quantitatively.

The problem set up is that of showing what is the effect of a property tax off-set to income taxes and what groups in society gain or lose by the allowance of such an off-set. In developing the study 5100 individual income tax reports and 13,100 corporation reports from Wisconsin tax payers were analyzed and classified. These were for

the year 1928. As a basis of comparison, the burden each would bear if the entire revenues were raised by a property tax was determined. For each of several income and property-owning groups the modifications which would result from the imposing of an income tax both with and without a property tax off-set were computed.

It was found that, for the Wisconsin records studied, a full property tax off-set would have reduced the yield of the individual income taxes 49 per cent, of the corporate income taxes 53 per cent, and the total yield of the income tax $51\frac{1}{2}$ per cent. An income tax, at the Wisconsin rates and without off-set, would have reduced the property tax rates by 15 per cent. With a full off-set property taxes would be reduced by 7.3 per cent. One of the striking features of the study is the demonstration that the conflict of interests is not between property owners and non-property owners but between various classes of property owners, and that the consequences of the off-set depend, not upon the size of the income, but upon the proportion between property taxes and income taxes, a situation which makes the results of the off-set very erratic.

The author first identifies three groups: 1, consisting of 54 per cent of the 5086 individual tax returns used, in which property taxes are the principal type and little or no income tax is paid. These will benefit most from a straight income tax; 2, those having both an income tax and a rather large property tax to pay. These will benefit most from an income tax with property tax off-sets; 3, those with income taxes which are large relative to their property taxes. These will benefit most from a continuance of the general property tax alone. The second group included 13 per cent of the individuals, the third, 33 per cent.

Ninety-six per cent of the farmers fell in the first class, income taxes $0.7\frac{1}{2}$ per cent of their property taxes. They would therefore benefit most by a straight income tax with no property tax off-set. This class includes, in addition to farmers, chiefly laborers and skilled tradesmen. The peculiar differentiation of results secured is attributed largely to the fact that, in the universe studied, income is much more concentrated than property ownership. Classifying the taxpayers according to incomes the author finds that real estate taxes impose a burden five times as heavy upon the \$1,100 incomes as on the \$39,000 incomes. At this point the reviewer is led to wonder whether there should not have been some discussion of the respects in which farm incomes differ in kind from other incomes. The differences in the nature of these incomes probably over-emphasize the differences shown, though the use of more comparable incomes, if it were possible, would probably not change the qualitative statement of the conclusions. Likewise the fact that the real estate, in a large part of the cases, represents the home rather than a business investment might have been subjected to somewhat further consideration; that is, a certain amount of tax, that on the home, operates much like a uniform tax per family and is of a somewhat different type than the taxes on large and small business properties.

All individuals find the total tax somewhat increased by the off-set, owing to the effect upon the contribution which corporations make to the state's income.

Chapter VI develops an interesting consideration of the shifting from group to group which occurs as a result of the off-set. In general, as a device for bringing taxes paid into a closer relation to ability to pay, the off-set stands condemned, as a result of this study. The limited off-set is shown to be less objectionable, while the Illinois system is shown to be even more objectionable than the ordinary unlimited off-set. In general, the small income groups will gain most from a straight income tax without property tax off-set.

M. R. Benedict

University of California

NEWS ITEMS

Changes in Farm Board Staff

The organization of the Federal Farm Board has been revised during the summer in accordance with the reduced appropriation for administrative expenses available for the fiscal year 1932-33 and in accordance with experience gained during three years' administration of the Agricultural Marketing Act. The new plan is designed particularly to secure the greatest possible effectiveness and coordination of the Board's work in assisting in the development of cooperative marketing.

Under the new organization, the work of economic analysis and part of the personnel of the former Economics Division have been incorporated in the Division of Cooperative Marketing. The work of this division will also now include, in addition to its previous functions, assistance to cooperative associations in qualifying for loans, examination of loan applications, and periodic and special analyses of business methods, policies, accounting practices, and financial condition of associations to which the Board has made loans.

Dr. F. B. Bomberger is now Chief of the Division of Cooperative Marketing and Mr. G. C. Haas is Assistant Chief.

Reorganization in Oregon Institutions

In the organization of the Oregon State College and the University of Oregon made by the new State Board of Higher Education, the following changes have been made in the staff of the former Department of Economics and Sociology of the now discontinued School of Commerce of the State College at Corvallis: The work in agricultural economics has been transferred to the School of Agriculture as a new Department of Agricultural Economics. Dr. M. N. Nelson, who was head of the discontinued department, will be head of the new department, and Dr. W. H. Dreesen has been transferred to it as Professor of Agricultural Economics. E. B. Mittleman and N. H. Comish have been transferred to the School of Business Administration in the University at Eugene. D. R. French, E. H. Moore, R. H. Dann, and Curtis Kelley have been transferred to the School of Social Science of the University, but will remain on the Corvallis campus to give courses in economics and sociology.

No changes have been made in the Extension staff in Agricultural Economics nor in the staff of the Department of Farm Management in the School of Agriculture.

Land Utilization Survey in Pennsylvania

A reconnaissance survey of the utilization of farm land in Indiana, Armstrong, Clarion, Jefferson, Cameron, Potter, and Center Counties, Pennsylvania, has been made this summer by the Division of Land Economics, Bureau of Agricultural Economics, in cooperation with the Department of Agricultural Economics Pennsylvania State College and the Greater Pennsylvania Council. Present utilization of all land in four of the counties was mapped; mapping the other three was not completed. After studying local conditions recommendations were made for one or more alternative uses of land that is clearly not adapted to its present use. The Greater Pennsylvania Council was created by an act of the legislature in 1931 for the development of the resources of the state through cooperative planning between the State and its citizens, and between the Council, other state departments, and all other agencies devoted to the same general ends.

Land Utilization Project in West Virginia

A land utilization project was begun this summer in five counties of southwestern West Virginia on a scale not often previously attempted. Nine departments of West Virginia University, the Agricultural Experiment Station, and the Extension Division are co-operating, each sending one or more specialists into the region for work, besides whom a field man is devoting his entire time to the project. Farm accounts will be kept by 228 typical farms, which will also be mapped to show size and location of fields, type of soil, slope, erosion, soil coverage; cropping history for five years will be obtained. There will also be a farm business analysis survey for 450 other farms. W. W. Armentrout, Associate Economist is in charge of the study.

Canadian Agricultural Economics Association

The Canadian Agricultural Economics Association held a very successful annual meeting at the University of Manitoba, Winnipeg, Manitoba, June 15 and 16. The work of the Pioneer Problems Committee was dealt with by W. A. Mackintosh and R. W. Murchie. W. Allen discussed research in farm management in Saskatchewan; H. C. Grant and J. F. Booth presented results of research in marketing dairy products; F. W. Reineohl read a paper on the organization and management of the Canada Finance Corporation; J. A. Carroll discussed the program of the Ontario Marketing Board and a round table discussion of research under way was held. W. Allen, University of Saskatchewan, was elected president; W. V. Longley, vice-president; and J. F. Booth, secretary. An advisory committee composed of H. C. Bois, F. M. Clement, F. C. Hart, and J. E. Lattimer was appointed.

Western Farm Economics Association

The annual meeting of the Western Farm Economic Association was held in Salt Lake City, Utah on August 9-10, with representatives in attendance from ten western states. The two-day program considered in detail five major subjects. These were: Agricultural Finance; Land Utilization; Economic Planning; Farm Management; and Agricultural Legislation. Resolutions arising from extended discussions were adopted indicative of the attitude of the assembly with respect to mortgage foreclosures, irrigation and reclamation district financing, and land utilization. Officers for the ensuing year are: Paul A. Eke of the University of Idaho, president; and W. P. Thomas of the Utah State Agricultural College, secretary and treasurer.

On August 11 and 12 the Western States Regional Outlook Conference held its annual meeting in Salt Lake City, Utah. Prominent members of the United States Department of Agriculture were present in addition to extension workers and research workers from various state colleges of agriculture. This is believed to be the most successful meeting ever held by the Outlook Conference.

The Central States agricultural outlook conference held at Chicago September 14-16 brought together about seventy-five persons from 13 states and the U.S. Department of Agriculture. Many of the State representatives attested the value of such conferences by going at their own expense.

The outlook conference for research and extension service workers in the Southern States is scheduled for November 8-11 at Atlanta, Ga. Plans contemplate increased information to be available but no formal printing by the Department of Agriculture.

The Department of Agricultural Economics of Montana State College, is making

an extensive study of the Musselshell Valley for the purpose of replanning agriculture in this area. Professor M. L. Wilson is directing the work on this project.

The Department of Agricultural Economics at Montana State College and the Bureau of Agricultural Economics, United States Department of Agriculture, are cooperating in a study of the relation between Montana farm taxes and public finance. Professor R. R. Renne of Montana State College, and Dr. B. W. Allin of the Bureau of Agricultural Economics, are now working on this project.

The third International Conference of Agricultural Economists will be held in Germany in August, 1933, arrangements having been made by the Council at a meeting at Oxford on June 27.

On July 1 this year there were 304 research projects in progress in the Bureau of Agricultural Economics conducted by 13 of its Divisions. All but one of the States are cooperating under formal agreement in one or more projects.

Mr. L. H. Brown, formerly of the Department of Farm Organization and Management at the University of Illinois, has accepted a position with the Connecticut Agricultural College.

Professor R. T. Burdick, Colorado State College of Agriculture, spent the month of July at Columbia University studying problems in business administration.

Mr. Charles L. Goodrich, Division of Farm Management and Costs, Bureau of Agricultural Economics, was retired July 1, after 24 years and 6 months in the government service.

Mr. E. G. Grest, Field Assistant in the Agricultural Economics Branch, Department of Agriculture, Ottawa, who has been stationed at the University of Saskatchewan, has been awarded the Saskatchewan Agricultural Research Scholarship for 1932. Mr. Grest obtained his bachelor's degree in agriculture at the University of Saskatchewan and his master's degree from the same institution. He will register in the Graduate School, University of Minnesota, and will specialize in economics.

Mr. M. D. Harris, who secured his master's degree at the University of Illinois in 1932, was added to the staff of that institution beginning September 1.

Mr. J. E. Lattimer, Macdonald College, Ste. Anne de Bellevue, Quebec, spent three months abroad visiting Great Britain and Denmark. Dr. Lattimer represented the Canadian Society of Agricultural Economics at the Midsummer Meeting of the Agricultural Economics Society of Great Britain which was held at Oxford University in June.

Professor E. A. Starch of Montana State College, is testing by experimental methods the organization of mechanically operated farms to isolate various factors of production and realign them in view of recent technological and economic changes.

Mr. George L. Sulerud, Assistant Agricultural Economist at the Oregon Experiment Station, has resigned to go back to his father's farm in Minnesota.

Mr. Ernest B. Thomas of Rushville, Indiana, has been appointed by President Hoover to the place on the Federal Farm Board vacated more than a year ago by Samuel R. McKelvie of Nebraska. Mr. Thomas is a former governor of the Federal Land Bank in Puerto Rico.

Social Science Research Council Fellowships
Awards in Agricultural Economics and Rural Sociology, 1932-1933

Name	Institutions Attended and Degrees Received	Present Position	Proposed Place of Study
Allen, Rutillus H.	Univ. of Maine, B.S. Conn. Agric. Coll., M.S.	Graduate Research Assistant, Univ. of Calif.	Harvard Univ.
Babcock, James O.	Cornell Univ., B.A. Iowa State Coll., M.A.	Research Staff, Univ. of Chicago	Univ. of Chicago
Bonnen, Clarence A.	Univ. of Ill., B.S., M.S.	Specialist Farm Management Research	Univ. of Calif.
Clark, Carl M.	Okla. A. & M. Coll., B.S., M.S.	Assistant Professor of Agricultural Economics	Univ. of Calif.
Crowe, Evelyn Tough	Univ. of Wis., A.B., M.A.	Assistant in Rural Sociology, Univ. of Wis.	Harvard Univ.
Erdmann, H. H.	Univ. of Wis., B. S.	Graduate Student at Univ. of Wis.	Univ. of Wis. 1st Sem. Columbia Univ. 2nd. Sem.
FitzGerald, Dennis A.	Univ. of Sask., B.S.A. Iowa State Coll., M.S.	Extension Specialist, Iowa State Coll.	Harvard Univ.
Kepner, Paul V.	Purdue Univ., B.S.A.	Instructor in Farm Management, Cornell Univ.	Cornell Univ.
Kraenzel, Carl F.	Univ. of N. Dak., A.B. Univ. of Minn., M.A.	Research Assistant, Univ. of Minn.	Harvard Univ.
Laughlin, Gordon C.	Oregon State Coll., B.S.	Graduate Student, Harvard Univ.	Univ. of Calif.
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PRELIMINARY PROGRAM

for the

December, 1932, Meeting

of the

AMERICAN FARM ECONOMIC ASSOCIATION

Hotel Gibson, Cincinnati, Ohio

December 28, 29, and 30

Wednesday Forenoon

JOINT SESSION WITH THE AMERICAN ECONOMIC ASSOCIATION

Farm Debt and Distressed Land Holding

Distressed Land Holding in the United States

A. Tax Delinquent

B. Mortgage Delinquent

Outlook and Plans for Handling Farm Mortgage Indebtedness

Wednesday Noon

JOINT SESSION WITH RURAL SECTION OF AMERICAN SOCIOLOGICAL SOCIETY

The New Landward Movement

Extent and Outlook

Social Implications

Wednesday Afternoon

ROUND TABLE I

Farm Management—Professional Farm Managing

Recent Developments and Present Status of Professional Farm Management in the United States.

Changes in Organization and in Practices that Have Recently Been Effective on Professionally Managed Mid-west Farms. (Three reports.)

ROUND TABLE II

Marketing Extension

Extension in Cooperative Business Management

Education Preliminary to Cooperative Organization

Instruction in Cotton Classing

ROUND TABLE III

Undergraduate Agricultural Economics

The Nature and Content of the Introductory or Required Courses in Agricultural Economics.

An Economist's Conception of the Economic Training to be Included in a Four-year Agricultural College Course for Prospective Farmers.

Undergraduate Preparation for a Graduate Major in Agricultural Economics.

Wednesday Evening

GENERAL SESSION

Land-Use Programs

A Land-Use Program for the Federal Government

State Land-Use Commissions and State Programs of Land-Use. (Three reports.)

Thursday Forenoon

ROUND TABLE I

Marketing and Prices of Farm Products

- Analysis of Short-time Movements of Prices of Farm Products.
- Future Trading in the Produce Markets.
- Differentials in Prices in Canadian and U. S. Markets.

ROUND TABLE II

Farm Management Extension

- The Nature and Possibilities of Type-of-Farming Readjustment Programs.
- The Technique of Assisting Farmers in Individual Farm Adjustments.
- Technique of Extension Use of Material from Farm Accounting Associations.

ROUND TABLE III

Taxation Research

- Review of Current Research in Public Finance in Relation to Agriculture.
- A Program of Research Basic to Income Tax Legislation as it Affects Agriculture.
- Research in Forest Taxation as it Relates to Agriculture.

Thursday Afternoon

JOINT SESSION WITH THE AMERICAN STATISTICAL ASSOCIATION

Evaluation of the Economic Position of Agriculture in the United States: by Regions and in General.

- Prices of Farm Products.
- Land Prices.
- Wealth, Income and Living.

Thursday Evening—Dinner Meeting

Cooperative Marketing

- A Program for the Cooperative Marketing of Tobacco—a report by the Chairman of a Committee of Eight.

Friday Forenoon

ROUND TABLE I

Supply and Price Relationships for Farm Products

- The Effect on Prices of Farm Products of Changes in Their Supply.
- Measuring the Responsiveness of Supply of Individual Farm Product to Changes in Price and other Factors.

ROUND TABLE II

Recent Developments in the Provision for Agricultural Credit in the United States.

- Plans for Handling Credit under the New Legislative Provisions.
- Agricultural Credit Corporation Problems.
- Some Short-Term Agricultural Credit Problems.

Friday Noon

FARM ECONOMICS LUNCHEON

- Plugging a Gap in an Agricultural Economist's Training.
- A Four-Year Presidential Program for American Agriculture.

Friday Afternoon

ROUND TABLE I

Farm Management

Theory of Combination of Enterprises on Individual Farms.

Use of the Type-of-Farming Material of the 1930 Census in Research and Teaching.

ROUND TABLE II

Marketing of Farm Products

The Practice and Theory of Market Exclusion within the United States.

The Economic Basis of Market Grades.

ROUND TABLE III

Adult Education of Farmers in Economics

The Connecticut System.

Methods of Adult Education in Price Economics.

A Program of Adult Study of Taxation.

TRANSPORTATION

Arrangements have been made with the New England, Western, Central, South-eastern, Southwestern, Trans-Continental, Trunk Line, and Canadian (Eastern Lines) Passenger Associations to grant reduced rates to all members of the American Economic Association and the allied associations, as well as to the members of their families, provided one hundred are in attendance at the annual meeting and present certificates.

The following directions are submitted and members wishing to take advantage of the reduced rates must comply with them.

1. *Obtain a certificate when buying your going ticket.*

Do not make the mistake of asking for a "receipt". Tickets at the regular one-way fare for the going journey may be obtained on the following dates only—December 24 to 30 inclusive.

2. *Leave your certificate at registration desk (at the Netherland Plaza Hotel) immediately on your arrival at the meeting.*

The reduced fare for the return journey will not apply unless your certificate is validated by the railroad agent and signed by the endorsing officer, Mr. F. S. Deibler, Secretary. A special agent of the railroad company will be in attendance to validate certificates December 28, 29 and the morning of the 30th.

3. *Call for your validated certificate before purchasing your return ticket.*

If the one hundred certificates are presented to the special agent, and your certificate is duly validated, you will be entitled to purchase, up to and including January 4, 1933, a return ticket via the same route over which you came, at one-half of the regular one-way tariff fare from the place of meeting to the point at which your certificate was issued.

Please note that although the return ticket must be purchased not later than January 4, 1933, the time limit on the use of the ticket has been extended to thirty days; that is, a member must reach his destination within thirty days from the date of his going ticket as stamped on the certificate.

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